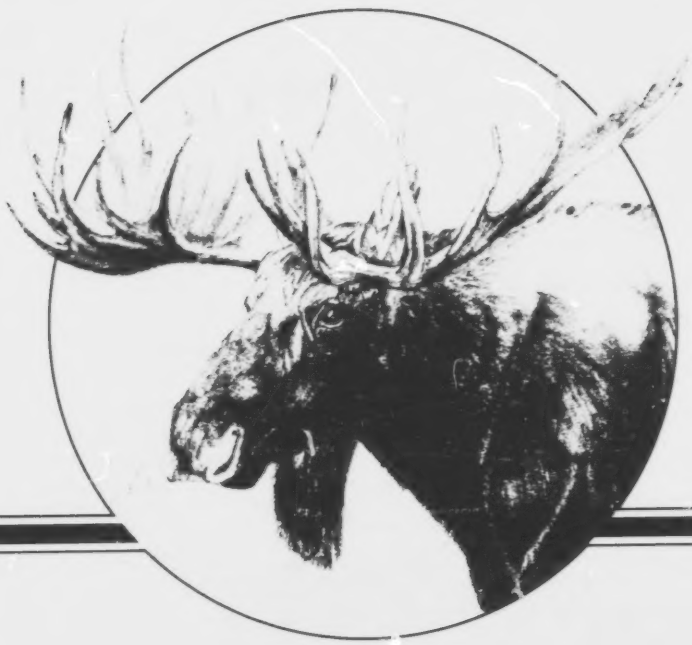


Five-Year Report To The Legislature On Wildlife

YEAR ENDING MARCH 31, 1987

September, 1987

Manitoba
Natural Resources

89-00209/

From the prairies of southwestern Manitoba to the boreal forest of the Canadian Shield and the tundra of the Hudson Bay coastline beyond, Manitoba has been endowed with a rich wildlife heritage. Throughout the province, Manitobans have a close relationship with wildlife either for recreational purposes or as a means of livelihood.

Wildlife provides thousands of hours of pleasure to naturalists, recreational hunters and casual observers alike. For several thousand professional guides and trappers, wildlife is an important source of income, while Treaty Indians rely upon wildlife for food and the pursuit of traditional life-styles. Based on the results of a 1981 survey and adjusting for inflation, Manitobans spent approximately $200 million on hunting and wildlife related outings and activities in 1986. Not only does wildlife contribute to the quality of life in Manitoba, it also contributes to the sustained economic development of the province.

The most serious threat to wildlife and related forms of activity is posed by the continued loss of wildlife habitat. Although dwindling wildlife populations are often attributed to hunting and trapping, it is the loss of habitat that poses the most serious long-term threat to the viability of many wildlife populations. The most important challenge that faces wildlife managers today is to ensure that suitable habitat is preserved for wildlife. Through proper stewardship of wildlife and its habitat, the wildlife heritage enjoyed today will be available for future generations.

July, 1988

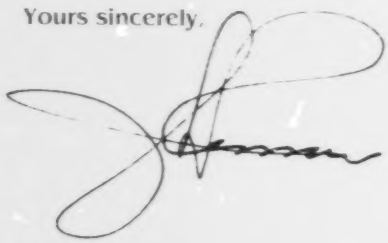
To His Honour
The Honourable George Johnson
Lieutenant Governor of Manitoba

Your Honour:

I am pleased to present the second Five Year Report to the Legislature on Wildlife for the period of April 1, 1982 to March 31, 1987.

The past five years have witnessed progress in many aspects of wildlife management. Wildlife and wildlife-related activities continued to contribute to the quality of life enjoyed by Manitobans and the sustained economic development of the province. Through the wise stewardship of wildlife populations and the habitat upon which they depend, present and future generations will enjoy Manitoba's rich wildlife heritage for years to come.

Yours sincerely,



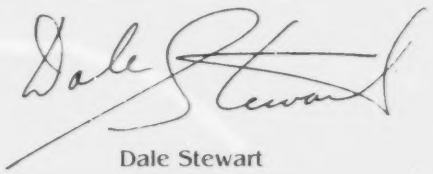
Jack Penner
Minister

To the Honourable Jack Penner
Minister
Department of Natural Resources

Sir:

I am pleased to provide the Five Year Report to the Legislature on Wildlife for the year ending March 31, 1987. The report contains a review of the status of wildlife and an assessment of wildlife management programs.

As the second Five Year Report prepared by the Wildlife Branch, it will provide an on-going review of the administration of the wildlife resource.



Dale Stewart
Deputy Minister

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Conclusion

Executive Summary

The abundance and diversity of Manitoba's wildlife resource are clear ecological indices of environmental health and quality of human life. During the past five years, wildlife managers were faced with the challenge of protecting the resource and providing new opportunities for public use. Co-operative agreements and increased liaison with major resource user groups characterized the 1982-87 period. Contributions from governments, industry, international interests, conservation organizations and educational institutions supported valuable studies ranging from endangered species and toxic chemical investigations to ongoing monitoring of raptors, polar bears, caribou and elk.

Since 1982, the Beverly and Kaminuriak barren-ground caribou herds have increased dramatically in both number and range, and white-tailed deer herds continued to flourish despite significant habitat losses.

Increases in ruffed grouse and sharp-tailed grouse populations from the natural low points in their population cycles are encouraging, as are the increases in bald eagle and double-crested cormorant populations. The removal of the white pelican from the endangered species list and the declaration of the polar bear as being in no immediate jeopardy (in spite of some world opinion to the contrary) must be highlighted.

A number of species, most notably moose, elk, badger, lynx, mallard, pintail, blue-winged teal, canvasback and burrowing owl have declined. The high demand for moose and elk by hunters continued from the last five-year period and resulted in more restrictive hunting seasons. Co-operative management arrangements with Treaty Indians and local communities have given rise to optimism, and moose management boards at The Pas and Waterhen have met with some success in effecting harvest reductions. Illegal use, however, continued to be a major problem in many areas of the moose and elk range. The T.I.P. program had a major impact on reducing the amount of illegal hunting in some areas.

Habitat loss, high pelt prices and increased efficiency of trapping in pockets of available habitat have suppressed the lynx population beyond the low part of the cycle. This occurred even when many R.T.L.'s were being utilized at 50% efficiency. A one-year closure in 1985 and a quota system implemented in 1986 aided in population recovery and its effects will become apparent during the next five-year period. Fur managers will be challenged by those who believe that the lynx should be entirely restricted in world trade.

Several waterfowl species declined due to habitat loss and high harvest levels throughout the Mississippi Flyway. A general decline in game bird hunters and an apparent switch to goose hunting underscore the seriousness of the decline. Stable hunting regulations from 1979 to 1983 showed a higher mortality rate of adult female ducks under a liberal season framework. Dry spring weather in 1984 resulted in a marked decline of mallards, pintails and teal throughout the prairie provinces.

Overall, muskrat, black bear and red-sided garter snake populations stabilized and are being monitored closely. Muskrats increased on Netley-Libau and Big Grass Marshes but were flooded out by hydro electric development on

the Rat-Burntwood River system. Black bear populations increased significantly over the last decade but are now showing signs of lower population levels in the Duck Mountain and Riding Mountain areas. Increased demand for black bear hunting will have to be kept in balance with availability.

The commercial harvest of garter snakes must be evaluated to determine whether the current monitoring system is sensitive enough to predict when too many snakes have been picked and a population decline has occurred. More snakes have been harvested annually during the past three years than during any previous years of harvest. Also, the relative abundance of snakes in known dens across central Manitoba has declined in the past five years.

Hunting from a vehicle, night hunting and hunting on private land without permission continued to be the most common offences (based on prosecutions). It is anticipated that they will continue to be a problem unless there are significant increases in staff and financial resources, although it should be stressed that the majority of hunters are responsible and law-abiding.

The decrease in hunting popularity during the past five years, largely reflected in fewer game bird and deer hunters, may be a temporary decline that will resurge during the next five years. However, the signal has been given that wildlife managers must be vigilant in meeting the requirements of licensed and Treaty Indian hunters as well as non hunting users. Several changes to hunting regulations were made in response to public requests.

Non-resident big game hunting increased in popularity during the last five years. The intent of non-resident hunting was to promote economic return and a quality hunting experience in rural areas not extensively utilized by Manitoba residents. Non-resident black bear hunting has become so popular in the Duck Mountain area that licence allocation is now being proposed.

The decline in fur production since 1980 is attributed to a 20-30% reduction in pelt values of some species and a significant decline in the lynx population. Anti-trapping groups have not had a significant effect on fur production in Manitoba. However, the Fur Institute of Canada and provincial educational programs have helped to improve public acceptability of trapping as a legitimate vocation.

The Manitoba Habitat Heritage Program and Heritage Marsh Program were implemented in 1985 and 1986 to combat wildlife habitat losses due to agricultural land clearing and drainage. These programs are cooperative efforts among several agencies to protect a significant portion of the land base for wildlife. These and other major programs such as the Habitat Enhancement Land Use Program are expected to focus attention not only on values of marshes and wildlife, but also on land and water stewardship.

Another cooperative venture, the North American Waterfowl Management Plan, received much attention during the planning and development phases. The overall impact of this international program on Manitoba's waterfowl populations will not be evident until the end of the next five-year period.

Interpretive programs and extension activities continued to be an important vehicle for conveying to the public the values and attributes of wildlife. Educational initiatives, such as Project WILD and the Caribou Schools Program were important developments.

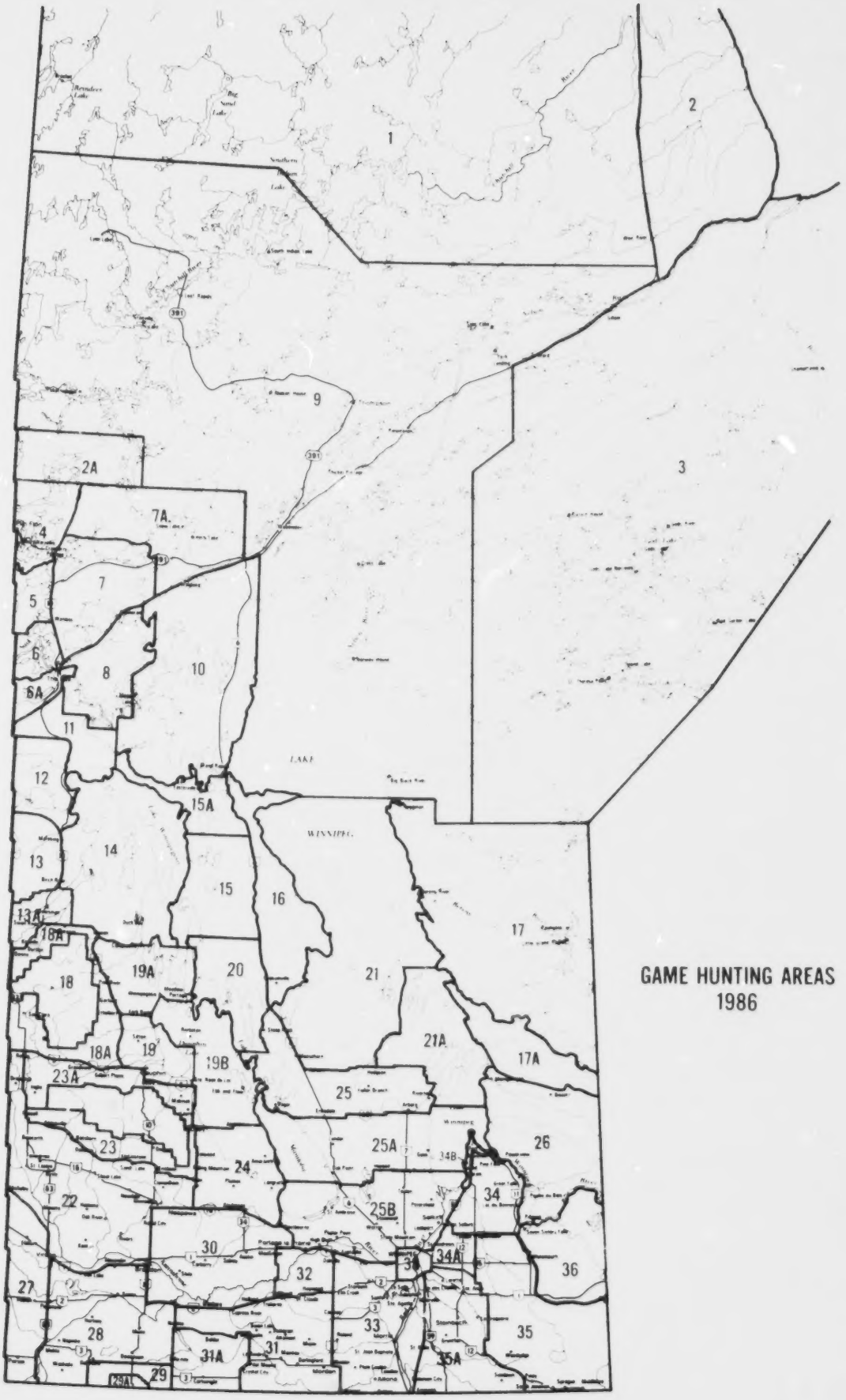
Numerous non-game projects and surveys were implemented during the 1982-87 period. Viable populations of all wildlife species must be maintained to avoid expensive population recovery projects in the future. Unfortunately, burrowing owls and piping plovers, among others, may require considerable effort to maintain populations. The re-introduction of wood bison to Manitoba presents exciting prospects and is a good example of government and private organizations working with native people. More of these initiatives will be welcomed in other wildlife projects.

Introduction

Over 400 varieties of wildlife commonly occur in Manitoba. Of these, 83 species are protected provincially by The Wildlife Act, while 269 species of birds and 5 species of marine mammals are protected federally by The Migratory Birds Convention Act and The Federal Fisheries Act. This report focuses on those mammals, birds, amphibians and reptiles which are protected by The Wildlife Act.

Every five years, in accordance with Part V of Chapter W140 of the Statutes of Manitoba 1980, c.73, the Minister responsible for wildlife must provide a five-year report to the Legislature on the status of the wildlife resource. The following report fulfills this requirement for the fiscal years 1982-83 to 1986-87. It is presented in two parts, the first reviewing the status of wildlife and the second dealing with specific wildlife management programs.

The Status of Wildlife section reviews the current status, trends in use, forecast of demand, and capability to meet demand for species listed in Schedule A of The Wildlife Act. Some species, because of their prominence, their endangered status, or their ecological importance, are treated individually. Other species are grouped, either according to biological relationships or patterns of use by Manitobans. The term 'Game Hunting Area' or 'G.H.A.' is used frequently throughout this section. Manitoba is divided into several Game Hunting Areas to facilitate responsive management of specific wildlife populations.

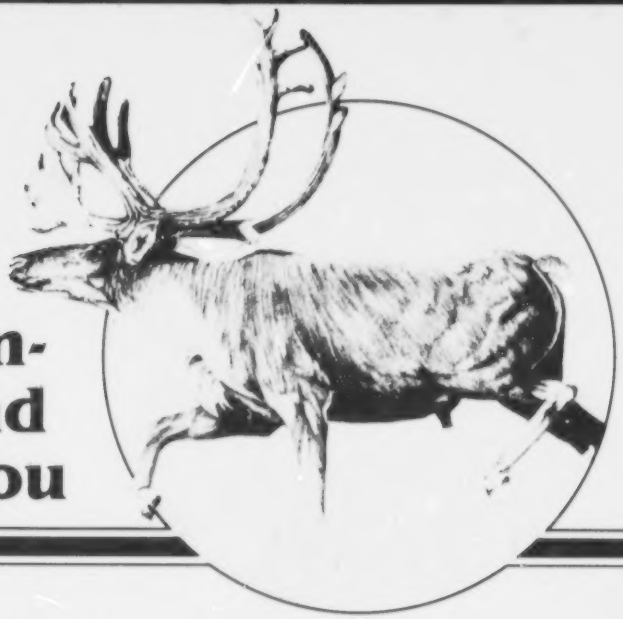


GAME HUNTING AREAS
1986

Part I

Status of Wildlife

Barren-ground Caribou



Manitoba's two major herds of barren-ground caribou, the Beverly and Kaminuriak herds, have increased in number in recent years. Both herds have shown signs of returning to their traditional ranges which encompass the central Northwest Territories, northern Manitoba and northern Saskatchewan. This improved situation is in marked contrast to the situation which existed in 1980.

The Kaminuriak herd, traditionally the most important to Manitoba's resource users, has shown the most rapid increase in numbers and range. The 1985 population estimate for the herd was 260,000 to 380,000 animals. These figures were derived using a new and more accurate survey technique employing aerial photography. Using a correction factor to account for differences in previous survey techniques, the 1980 population estimate was 59,000 to 81,000 animals and the 1983 estimate was 180,000 to 280,000 animals. This increase in herd numbers was followed by an expansion of the range used by the herd, most notably into the forests of northern Manitoba. Five years ago, only a small percentage of the herd crossed the border between Manitoba and the Northwest Territories and remained in the extreme north for only a few months. In 1985-86, however, several tens of thousands of animals spent October to April in the forested areas of Manitoba, moving as far south as Southern Indian Lake.

The Beverly caribou herd also increased in number over the reporting period. The 1984 population estimate was 250,000 to 420,000 animals, much improved over the 167,000 to 234,000 animals estimated in 1980. This herd has also shown a tendency to spend more of the winter months in the northern forested areas of Manitoba and Saskatchewan.

While an increase in herd recruitment due to high calf survival rates can explain the population increase in the Beverly herd, it can only partially account for the large increase in the Kaminuriak herd. It is believed that additional animals immigrated to the calving ground from within or outside the traditional range.

Trends in Use

With the increase in herd numbers and range utilization, a substantial increase in the caribou harvest by traditional Treaty Indian resource users has occurred. The community of South Indian Lake joined Tadoule Lake, Lac Brochet and Brochet as being the primary communities using the resource. The recorded kill over the entire ranges of the herds (Manitoba, Saskatchewan and Northwest Territories), however, did not increase significantly (15,000 to 19,000 animals annually).

The demand for barren-ground caribou by the four major Manitoba communities is expected to increase slightly over the next five-year period, with an anticipated average harvest of 4,000 to 6,000 animals per year.

Recent trends of more southerly migration into Manitoba will expose the Kaminuriak herd to additional hunting pressure.

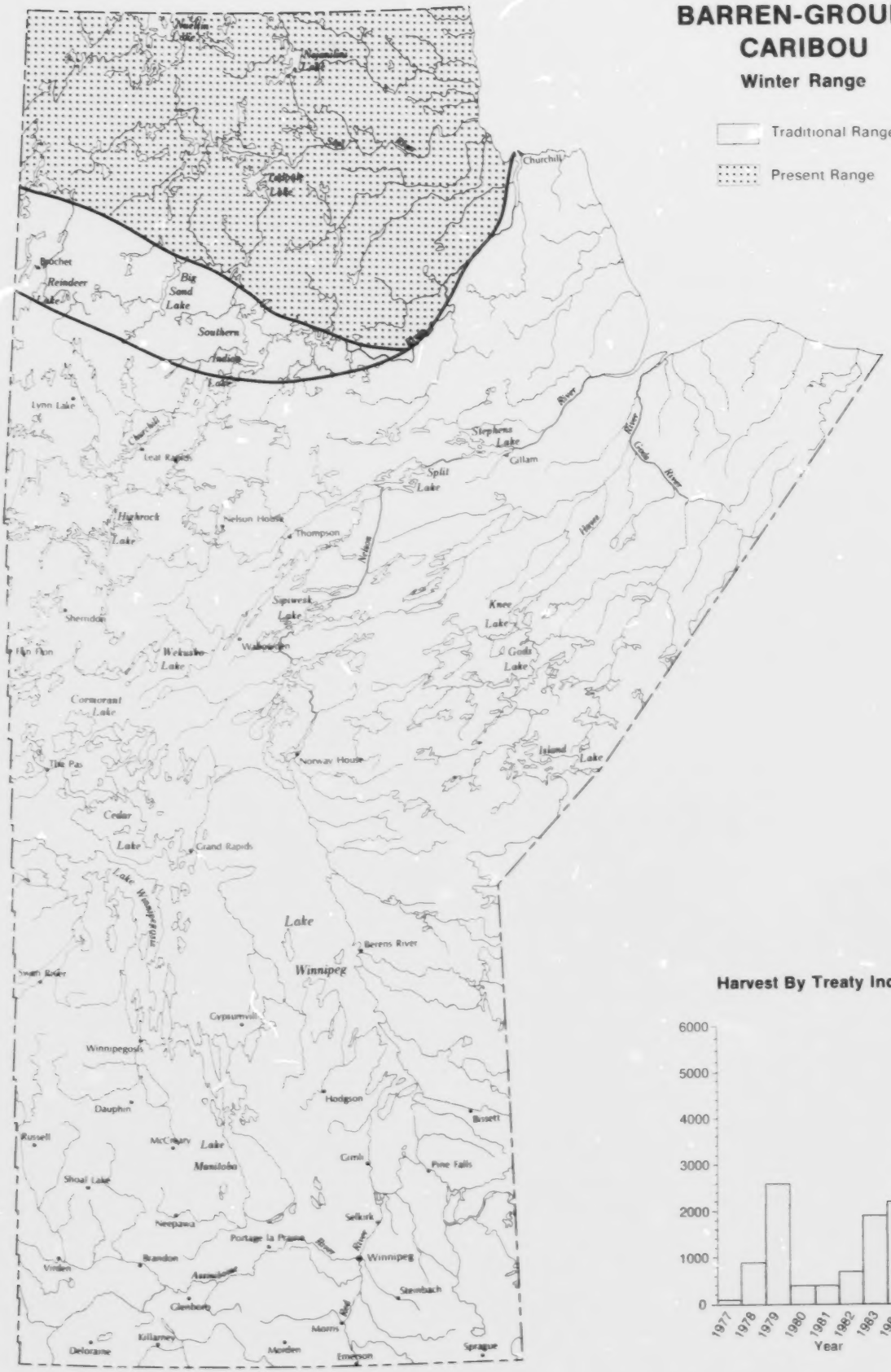
There will be an additional demand on the resource in those years when a winter road is operated between South Indian Lake and Tadoule Lake as residents from more southern communities such as Nelson House, Split Lake, Cross Lake and Norway House hunt caribou.

BARREN-GROUND CARIBOU

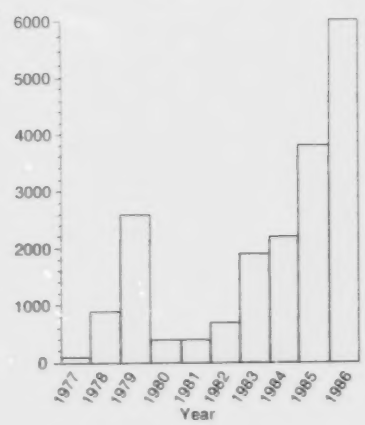
Winter Range

Traditional Range

Present Range



Harvest By Treaty Indians



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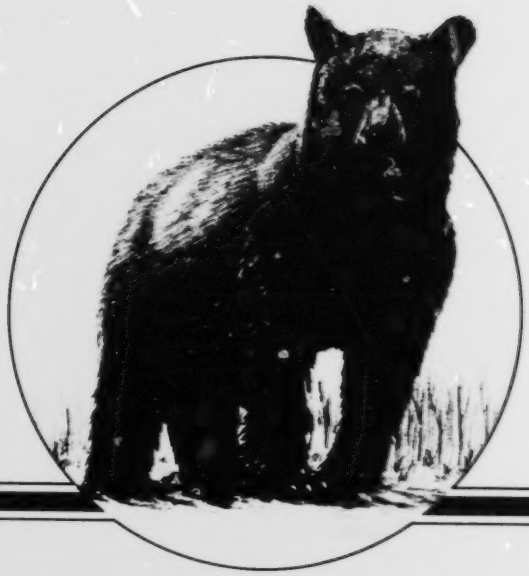
Increased demand for recreational hunting of barren-ground caribou in Manitoba is also anticipated. Across the entire range (Northwest Territories, Manitoba and Saskatchewan) an increased demand for commercial use of caribou is expected.

Capability to Meet Demand

Using a minimum combined estimate of 510,000 animals for the two herds, approximately 25,000 caribou can be safely harvested on an annual basis. If the rate of calf survival maintains the levels of recent years, the herds will continue to increase while sustaining this harvest.

The demand for barren ground caribou in Manitoba is being largely met, as it is across much of the range. Hunters from only a few areas, such as Fort Smith, N.W.T. have expressed a desire for a greater harvest. The Caribou Management Board will continue to monitor the status, distribution and harvest level of the herds as part of its overall management plan.

Black Bear



The black bear is common throughout the forested areas of Manitoba, although its exact numbers are unknown. Field reports and the frequency of bear damage claims, however, indicate that the highest bear densities occurred in the Duck Mountain, Porcupine Hills and Riding Mountain National Park areas. It is estimated that after a period of approximately 10 years during the 1970's when black bear populations increased, the provincial population has stabilized at approximately 25,000 animals.

Trends in Use

The greatest demand for black bears came from recreational hunters. Hunting activity increased dramatically over the past five years. Since the previous reporting period, resident bear hunter numbers increased by an average of 60% and non-resident bear hunter numbers by 47%. Seventy-five percent of non-resident hunting activity occurred in western Manitoba, placing increasing pressure on bear populations in those areas. In the Duck Mountain area, where the greatest increase in hunters was experienced, a system of non-resident licence allocation was established in 1987 for implementation in 1988. Most resident bear hunters (62%) hunted in southeastern Manitoba.

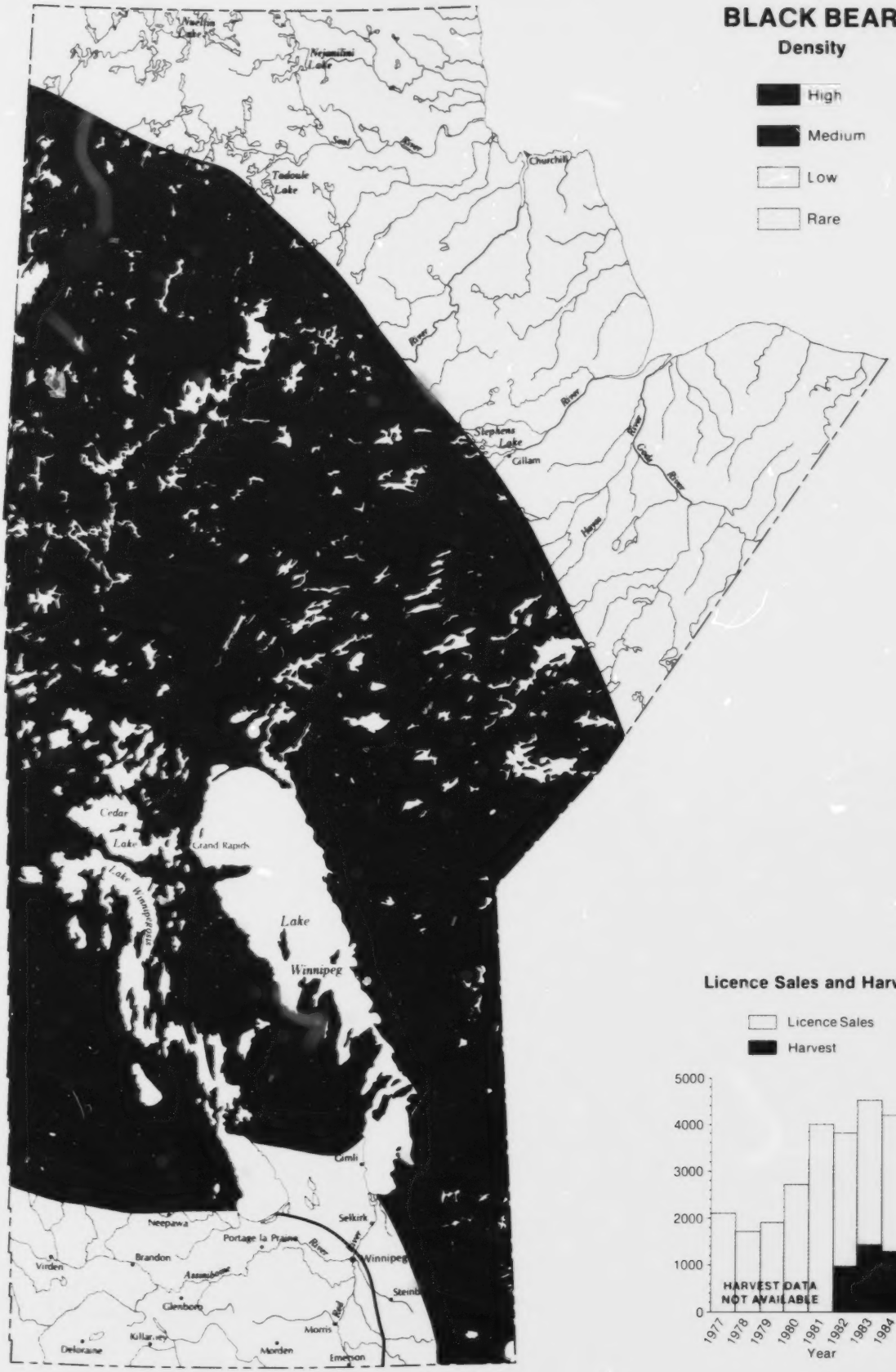
Non-resident hunter success rates averaged over 50% for a total harvest of 175 to 300 bears per year. The resident hunter success rate was 25% to 30% for an estimated annual harvest of 900 to 1200 bears.

Licenced trappers took approximately 400 bears each year and 300 bears were taken annually to protect property and to ensure human safety.

The management of black bears has been largely influenced by the diverse needs of Manitobans. Those who enjoy photographing, viewing and hunting black bears wish to maintain high population levels, whereas beekeepers and cattle producers who suffer damage desire lower numbers. The management strategy has been intended to maximize recreational activity while keeping problem bear incidents at a tolerable level.

Capability to Meet Demand

The provincial black bear population can support current use demands. However, black bears are more susceptible to over-harvest than other species due to a much lower reproductive rate. In areas of the province where harvest levels have increased significantly, more intensive management will be required to meet the diverse needs of Manitobans and ensure the viability of present populations. This will include monitoring populations and implementing a system for managing hunting activity over the next reporting period.


BLACK BEAR
Density
High
Medium
Low
Rare
Nueltin Lake
Nejanilini Lake
Seal River
Churchill
Tadoule Lake
River
Stephens Lake
Gillam
Hayes
Cedar Lake
Grand Rapids
Lake Winnipegosis
Lake Winnipeg
Gimli
Selkirk
Neepawa
Portage la Prairie
Red River
Winnipeg
Virden
Brandon
Assiniboine
Steinbach
Glenboro
Morris
Killarney
Deloraine
Morden
Emerson
Licence Sales and Harvest
Licence Sales
Harvest
5000
4000
3000
2000
1000
0
HARVEST DATA NOT AVAILABLE
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year

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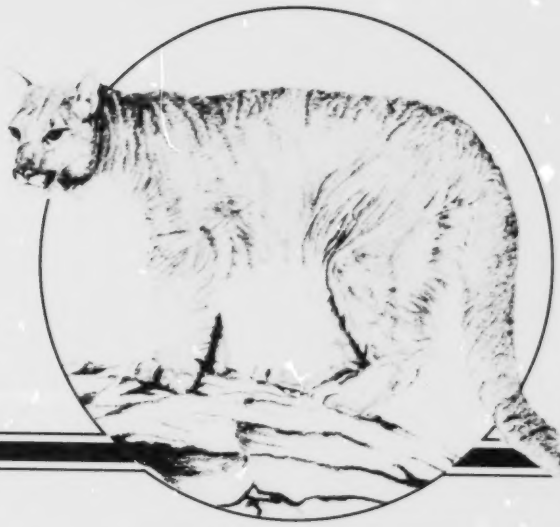
Cougar



Cougar populations remained relatively low in Manitoba. There were 10 to 40 sightings recorded annually, most frequently in the southeastern portion of the province. Evidence of cougar populations was also recorded in the western, southwestern and Interlake areas. The higher frequency of occurences in the southeast was thought to be a function of higher human activity levels due to good road access and proximity to a major urban centre. No sign of cougars was found during a field search conducted in the area in March 1985, but it is suspected that deep snow and wolves inhibited cougar use of the search area during the winter months.

The total provincial cougar population is thought to be less than 50 animals.

Trends in Use

Due to the furtive nature of the cougar, encounters with humans were rare. Sightings or tracks of even a single cougar aroused public interest and concern. This pattern is expected to continue in the next reporting period.

Capability to Meet Demand

There is no measured level of demand for cougars in Manitoba but public and media response to reported sightings is always enthusiastic. Serious attention must be given to reports from the public and interpretation of results should be continued.

COUGAR
Density
Low
Single Cougar Sighting (1982-1987)
Churchill
Thompson
Norway House
Cormorant Lake
Cedar Lake
Grand Rapids
Lake Winnipeg
Winnipeg
Gypsumville
Dauphin
Portage la Prairie
Brandon
Killarney
Deloraine
Hodgson
Bissett
Lynn Lake
Leaf Rapids
Gillam
Split Lake
Nelson House
Sherridon
Wekusko Lake
Island Lake
Knee Lake
Stephens Lake
Southern Indian Lake
Reindeer Lake
Big Sand Lake
Tadoule Lake
Nejanilini Lake
Seal River
Hayes River
Gods River
Berens River
Lake Manitoba
Shoal Lake
Neepawa
Minnedosa
Carberry
Morris
Emerson
Virden
Hamiota
Melita
Pilot Mound
Manitou
Swan River
Flin Flon

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Elk

The deterioration of habitat due to forest succession has contributed to a general long-term decline in elk numbers. Over the last five years the provincial elk population continued to decline, due primarily to a drop in the Riding Mountain elk population during the winter of 1984-85. Although no major increase in any herd was noted, most are holding their own or decreasing only slightly.

In the winter of 1986 there were approximately 6,600 elk in seven distinct herds: Riding Mountain National Park (3,500), Duck Mountain (1,500), Spruce Woods (500), Central Interlake (400), North Interlake (100), Porcupine Hills (200) and Red Deer River (50). Small numbers of elk were also found in the southeastern portion of the province and in isolated pockets In the southwestern region.

Trends in Use

Due to the limited number of licences available, the demand for recreational hunting was proportionally greater for elk than for any other big game species. Elk hunting was restricted to residents of Manitoba and firearm licences were issued through a draw. Most firearm licences were issued on a two licence/one tag basis and hunters who obtained a licence were not eligible to apply in the following year.

The elk bag limit shifted gradually from 'any animal' to 'bulls only' in all areas except G.H.A. 23/23A and the elk archery seasons. A resulting shift in harvest also occurred, with bulls being 60% of the total harvest in 1986 while they were only 40% of the total harvest in 1981.

The extent of the annual elk harvest was dictated by the number of animals harvested in G.H.A. 23/23A, which in turn was directly related to the amount of snow accumulation. As snow depth increased, the movement of animals from Riding Mountain National Park to adjacent farmland also increased and harvest was higher. Consequently, depending upon winter snow conditions, the annual provincial elk harvest varied significantly from year to year.

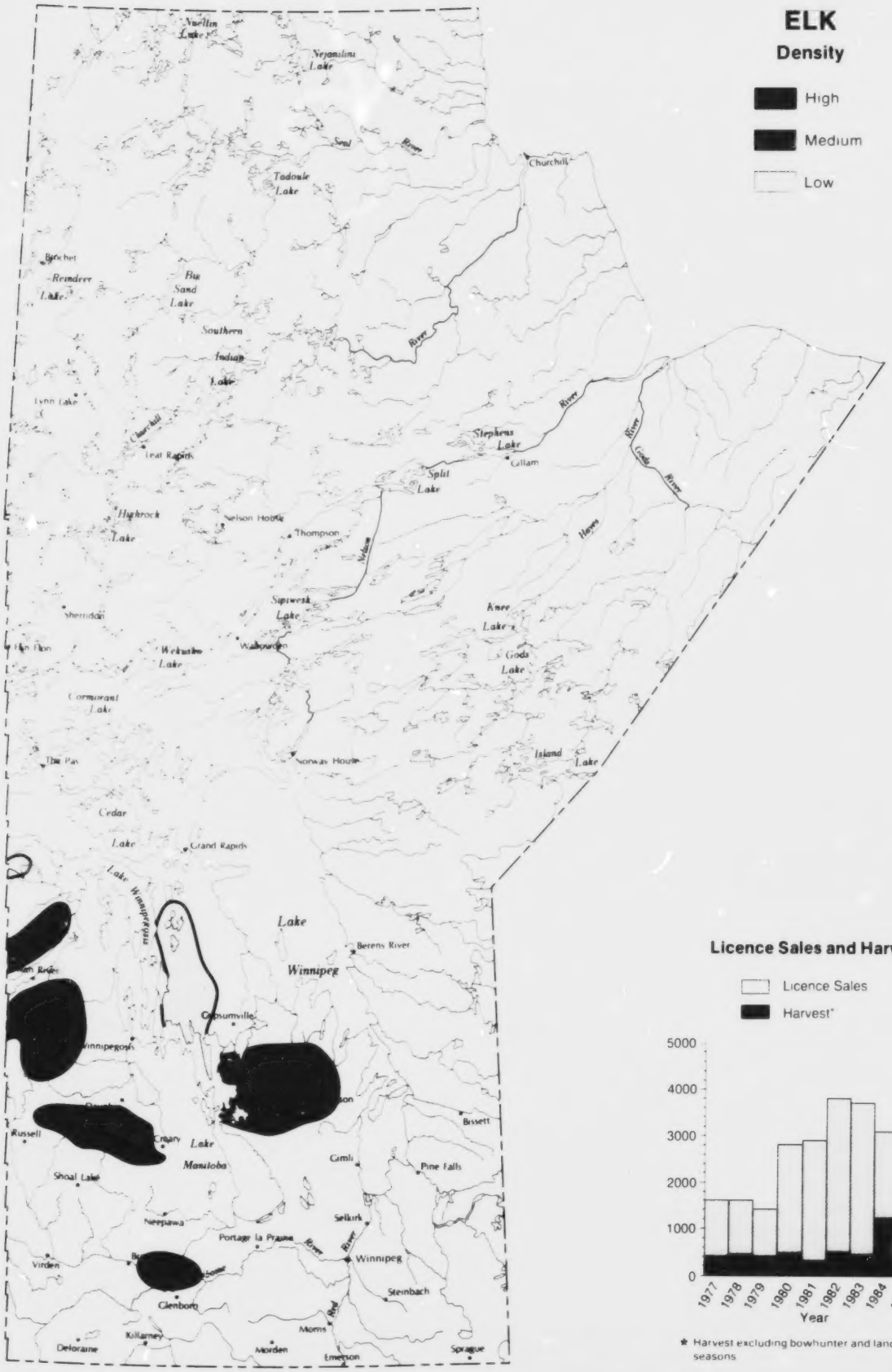
Approximately 250 elk were illegally harvested each year, 75-80% of which were estimated to be cows and calves. This percentage is in relative proportion to the percentage of cows and calves occurring in the total population. Aerial surveys flown in 1983-84 revealed that 83% of the elk counted were cows and calves.

The total harvest of elk by Treaty Indians is unknown; however, known harvest and breakdown by age and sex documented over the reporting period indicated that approximately 66% of the harvest was cows and calves. A high harvest of cows and calves (particularly breeding cows) has had a more serious impact on the population than would an equivalent harvest of bulls or other non-producers. Expanded education and voluntary restraints on cow and calf harvest are required to reduce this impact.

The concept of elk ranching was also addressed over the past five year period. After considerable debate, with input from supporting and opposing groups, a decision was made to prohibit elk ranching in Manitoba.

Capability to Meet Demand

Elk populations are presently unable to meet the existing demand from both consumptive and non-consumptive users. Over the next


ELK
Density
High
Medium
Low
Churchill
Thompson
Norway House
Cormorant Lake
Wekusko Lake
Sipiwesk Lake
Split Lake
Stephens Lake
Gillam
Leaf Rapids
Lynn Lake
Grand Rapids
Lake Winnipeg
Lake Manitoba
Winnipeg
Portage la Prairie
Brandon
Steinbach
Selkirk
Pine Falls
Virden
Killarney
Deloraine
Morden
Emerson
Sprague
Russell
Shoal Lake
Neepawa
Clenboro
Moosehorn
Red River
Nelson River
Hayes River
Churchill River
Licence Sales and Harvest
Licence Sales
Harvest*
5000
4000
3000
2000
1000
0
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
* Harvest excluding bowhunter and landowner elk seasons

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five year period the shortfall is likely to continue. Habitat management programs aimed at rejuvenating elk habitat, however, have the potential to improve the situation. In the Duck Mountain area, action has been taken to rejuvenate elk habitat near Childs Lake and an annual program of spring burning, initiated in 1984 to curtail forest succession in the Shell River, Boggy Creek and Roaring River areas, will continue throughout the next reporting period. Curtailment of uncontrolled hunting along with community and Treaty Indian involvement in elk management will be encouraged.

Gray (Timber) Wolf

Manitoba's wolf population remained relatively stable at an estimated 4,000 animals. Wolves continued to inhabit large tracts of forest and tundra and were also present, in fluctuating densities, in agricultural areas bordering the Sandilands and Agassiz Provincial Forests, the central Interlake, the Westlake area and the Riding Mountain and Duck Mountain areas.

Trends in Use

Wolves were taken annually by trappers and hunters. The number of wolves harvested by trappers depended on pelt prices and the number of active trappers who were skilled in taking wolves.

During this reporting period, when the average pelt price was $85.00, an average of 350 wolves per year were taken by trappers. This compares to 400 per year in the previous five year period when pelt prices averaged $130.00. In addition, recreational hunters took fewer than 50 wolves per year and less than 50 wolves were taken annually under the department's problem wolf removal program.

Efforts were made to increase wolf harvest by licenced trappers through wolf trapping seminars and field demonstrations. Non-residents were permitted to hunt wolves for the first time in 1986.

Capability to Meet Demand

The population of timber wolves in Manitoba is stable and could support substantially higher harvest levels. The department will continue to encourage trappers and hunters to harvest wolves, particularly in areas where increased harvest may reduce conflict between wolves and agricultural interests. At the same time, the role of the wolf in predator/prey relationships is valued by wildlife managers and its appreciation by the public is recognized. In this context the population is considered adequate.

WOLF
Density
Medium
Low
Cedar
Lake
Grand Rapids
Lake
Winnipeg
Hodgson
Dauphin
Lake
Manitoba
Gimli
Shoal Lake
Seepawa
Selkirk
Portage la Prairie
Brandon
Virden
Winnipeg
Glenboro
Killarney
Deloraine
Morden
Morris
Emerson

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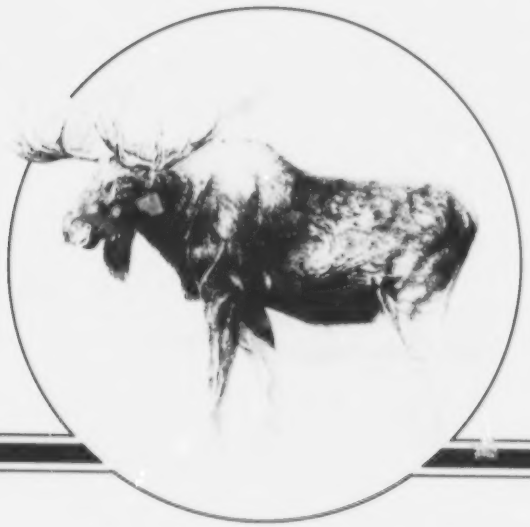


Moose

Manitoba's moose population declined from an estimated 28,000 animals in 1981 to 21,500 in 1986. The major factors contributing to this decline included habitat loss, predation, poaching and Treaty Indian hunting. These factors affected moose populations to varying degrees, depending on local conditions.

Logging activity north of Lake Winnipegosis, and major forest fires south of The Pas and east of Lake Winnipeg had varying effects on local moose populations. Populations initially declined but, in many cases, will benefit over the next 10-20 years with the re-establishment of ideal moose habitat. In some areas, however, large clear-cuts occurred so close to each other that their use by moose was precluded; in many of the burn areas, significant habitat improvement is not expected because the overlying soil was destroyed leaving little or none to support new growth. Elsewhere, north of Lake Winnipeg, moose productivity increased following a major fire in the late 1970's.

Predation by timber wolves and black bears caused concern due to additional mortality imposed on already reduced moose populations.

Poaching has had a significant impact on reduced moose populations. Based on hunter questionnaires, hunter checks and estimates by field staff, it was estimated that 500 moose were killed illegally each year between 1982 and 1986, 70-75% of which were cows and calves.

Licenced hunting was not believed to be a major factor in reducing current levels, because of control on the number of licenses and bulls only harvest in critical areas. Subsistence hunting by Treaty Indians has affected moose populations due to the proportion of cows and calves harvested. Of the moose harvested between 1982 and 1987, for which age and sex were known to the department, 50-60% were cows and calves. It is believed that cows and calves were harvested more frequently than bulls because cows and calves make up a high percentage of the total moose population.

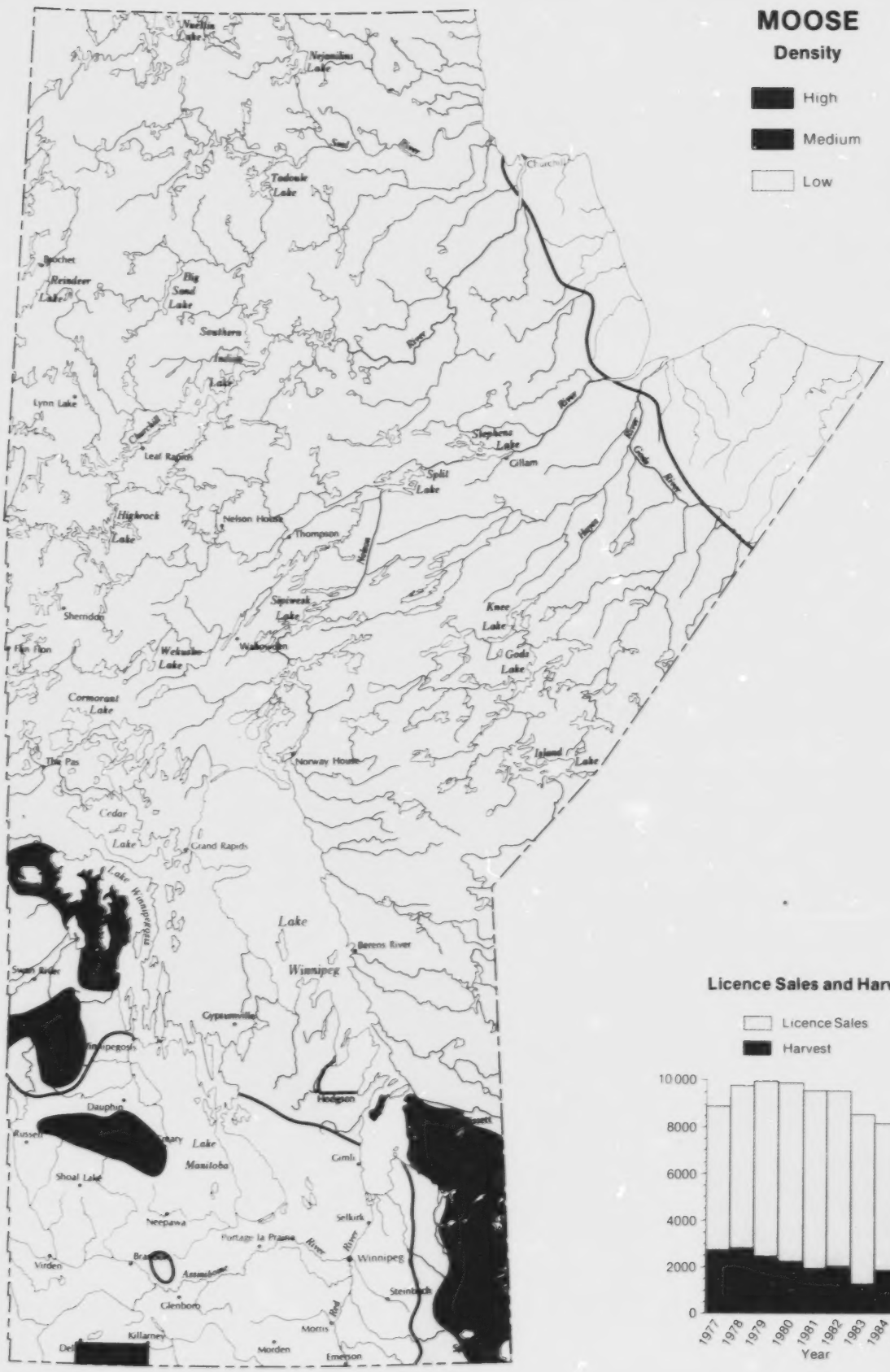
New roads into formerly inaccessible areas also resulted in increasing hunting pressure and may have contributed to lower moose populations in such areas.

Parasites such as brain worm and liver fluke were concerns, particularly in the Spruce Woods area and the southeastern portions of the province where approximately 80% of the moose examined in the last five years were infected with liver fluke. Impact of these parasites on the moose populations is yet unknown but their presence is acknowledged. Moose-ticks, which can be fatal under certain conditions, were found on moose throughout the province but no major die-off was attributed to them during the reporting period.

Trends in Use

Both the harvest of moose and the number of licenced hunters declined over the reporting period. A total of 9,168 licenced moose hunters harvested about 2,000 moose in 1982, compared to 7,226 hunters harvesting about 1,800 moose in 1986. In addition, an estimated 4,000 to 7,000 Treaty Indians hunted moose annually over this period.

Because the age and sex structure of the harvest can have a greater impact on a moose


MOOSE
Density
High
Medium
Low
Wuskwatim Lake
Nejanilini Lake
Seal River
Tadoule Lake
Churchill
Brochet
Reindeer Lake
Big Sand Lake
Southern Indian Lake
Churchill River
Lynn Lake
Leaf Rapids
Stephens Lake
Gillam
Split Lake
Gods River
Hayes River
Highrock Lake
Nelson House
Thompson
Nelson River
Sherridon
Sipiwesk Lake
Knee Lake
Pen Hook
Wekusko Lake
Wabowden
Gods Lake
Cormorant Lake
The Pas
Norway House
Island Lake
Cedar Lake
Grand Rapids
Lake Winnipegosis
Lake Winnipeg
Berens River
Swan River
Gypsumville
Dauphin
Hodgson
Russell
Lake Manitoba
Gimli
Shoal Lake
Selkirk
Neepawa
Portage la Prairie
Winnipeg River
Virden
Brandon
Assiniboine
Winnipeg
Steinbach
Glenboro
Red River
Morris
Killarney
Morden
Emerson
Licence Sales and Harvest
Licence Sales
Harvest
10 000
8000
6000
4000
2000
0
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year

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population than the total number of animals taken, there was a general shift from 'any moose' to 'bulls only' bag limits in licenced hunting seasons. In 1986 the harvest by licenced hunters was comprised of 92% bulls while in 1982 the harvest was 76% bulls. In a further effort to restore moose populations, 6,000 km^2 of hunting area were closed to licenced hunters between 1982 and 1986.

Information from field staff suggests that the overall hunting intensity by Treaty Indians remained constant over the reporting period, but the harvest may have decreased because of reduced herd populations, particularly in the more accessible areas. In G.H.A's 8 (The Pas) and 20 (Waterhen) where cooperative agreements were signed with various Indian bands, there was a significant decrease in the harvest.

Up to 400 licences were made available to non-resident hunters each year. The number of licences actually sold declined from 220 in 1982 to a low of 42 in 1985. Non-resident moose hunting was directed to remote areas where competition with residents was minimal or non-existent.

Capability to Meet Demand

The current demand for moose by Treaty Indians will continue as will the demand for recreational moose hunting. The moose population will continue to decline and make the task of meeting this demand even more difficult. Stringent management programs are necessary and the impact of uncontrolled hunting must be reduced. Current efforts to reduce or direct the recreational harvest must continue. Also important is reducing the total harvest of moose and altering the age and sex of the take by Treaty Indians. In some areas, a predator control program may be necessary to help the herds recover to a point where losses can be reduced.

The department will continue discussions with various Indian Bands to illustrate the status of the local moose herds and the consequence of harvesting cows and calves. Through consultation, it is believed that the problem can be overcome by all interested parties working together.

Polar Bear

The polar bear population in Manitoba remained relatively stable during the past five years. The summer and fall population between the Churchill and Nelson Rivers numbered between 800 and 1200 animals according to 1986 estimates. Polar bears were also found in the Nelson River to Ontario border coastal area. The area was probably used for denning, but this has not yet been confirmed.

The Manitoba polar bear population is shared with the Northwest Territories along the western coast of Hudson Bay. Up to 15% of the polar bears harvested on the Keewatin coast, from Rankin Inlet to Eskimo Point, N.W.T., were marked while spending the summer in Manitoba. Bears marked in Manitoba were observed as far north as Coral Harbour, N.W.T. and the northwestern coastline of Quebec.

In April 1986, The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) declared the polar bear to be in no immediate danger or jeopardy based on its current biological status. Since 1976, polar bears have received full international protection through an Agreement on Conservation of Polar Bears signed by the U.S.S.R., Norway, Denmark, the U.S.A. and Canada. These countries are also party to the Convention on International Trade of Endangered Species (CITES) which regulates world trade in polar bears, hides or parts.

Trends in Use

Polar bears are important to Manitoba because Churchill is the most accessible location in the world for viewing and photographing wild polar bears. Churchill drew more than 10,000 tourists each year and became recognized as 'The Polar Bear Capital of the World'. Unparalleled opportunities exist for the study of polar bear ecology, physiology and behaviour.

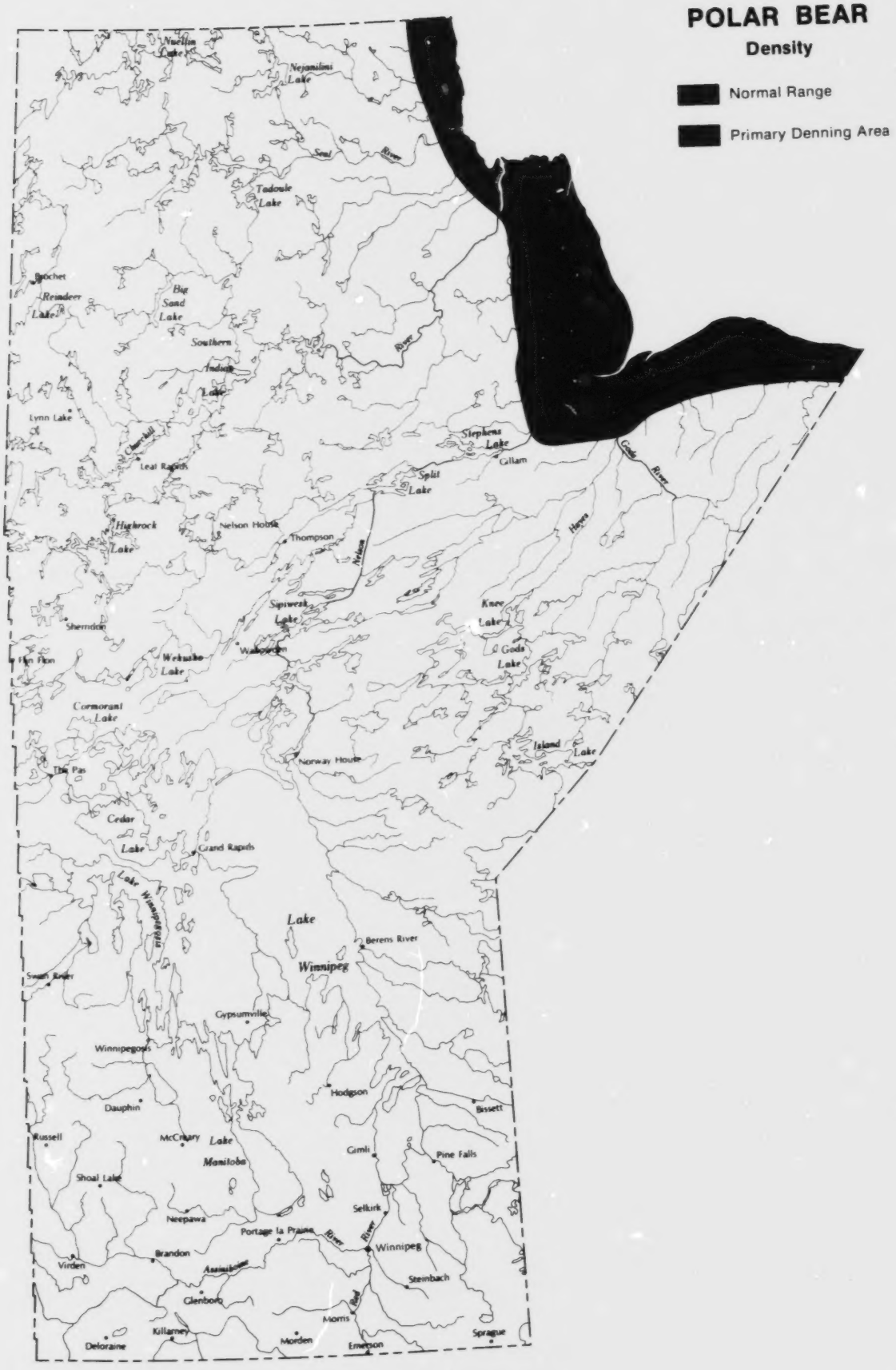
Since first protected under The Wildlife Act in the 1950's, polar bears have not been hunted in Manitoba. The only polar bears legally killed (usually less than 10 each year) were those taken in protecting life and property. The number of bears killed for this reason has decreased since a polar bear holding facility became operational in the fall of 1982.

In 1981 the potential annual harvest for the population was set at 90 bears; 55 for the Northwest Territories and 35 for Manitoba. The Northwest Territories later increased its allocation to 62. Because Manitoba does not actively harvest polar bears, 15 of its tags were temporarily reallocated to native communities in the Northwest Territories.

The total annual take of 70 bears from the southwestern Hudson Bay population was comprised of 60 in the Northwest Territories and 10 in Manitoba. The annual harvest was only seven percent of the population and is considered sustainable.

Capability to Meet Demand

Barring environmental contamination or a major disruption of denning areas, the immediate future poses no threat to Manitoba's polar bears. Although the species is considered endangered on a worldwide basis, Manitoba's population is expected to remain stable and will continue to be an important visitor attraction. The potential threat by polar bears to human life and property, however, continues to be a concern.


POLAR BEAR
Density
Normal Range
Primary Denning Area
Wuollin Lake
Nejanilini Lake
Seal River
Tadoule Lake
Brochet
Reindeer Lake
Big Sand Lake
Southern Indian Lake
Churchill River
Lynn Lake
Leaf Rapids
Stephens Lake
Gillam
Split Lake
Hudson Bay
Nelson River
Highrock Lake
Nelson House
Thompson
Sherridon
Sipiwesk Lake
Knee Lake
Ilford
Wabowden
Gods Lake
Wekusko Lake
Cormorant Lake
Island Lake
Norway House
The Pas
Cedar Lake
Grand Rapids
Lake Winnipegosis
Lake Winnipeg
Berens River
Swan River
Gypsumville
Winnipegosis
Hodgson
Dauphin
Bissett
Russell
McCreary
Lake Manitoba
Gimli
Pine Falls
Shoal Lake
Selkirk
Neepawa
Portage la Prairie
Red River
Winnipeg
Brandon
Virden
Assiniboine River
Steinbach
Glenboro
Morris
Killarney
Deloraine
Morden
Emerson
Sprague

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White-tailed Deer

White-tailed deer continued to be one of Manitoba's most abundant and visible animals. Despite a steady decrease in habitat caused by clearing wooded cover for agricultural and urban development, deer numbers have remained relatively stable. It is inevitable, however, that habitat loss will eventually result in lower deer populations.

The size of the provincial deer population changed dramatically during each year. A midsummer population of 140,000, for example, typically dropped to about 85,000 animals by the next spring. Harsh winters such as the one that occurred in 1984-85 caused even more serious fluctuations in deer populations. During the past decade, winters have ranged from very severe to very mild and consequently, estimates of midsummer deer populations have varied from a low of 60,000 in 1974 to about 150,000 in 1986.

The Winnipeg deer herd, cherished by many city residents, was the subject of a major relocation project in 1985 and 1986. Habitat loss coupled with damage caused by deer to residential vegetation, deer-auto collisions and hazardous airport situations, crystallized the need to reduce the size of the rapidly growing herd. With the help of the St. Malo Wildlife Association, 264 deer were relocated to southeastern Manitoba. The long term goal is to maintain the city herd at 300 animals.

Trends in Use

Since 1971, firearm deer licence sales have varied from 34,800 to 49,700 licences per year. It is expected that the demand for firearm licences will remain in this range for the next five years. Although the number of hunters remained relatively stable over the reporting period, the pressure on recreational hunting sites increased due to dwindling bush cover in southwestern Manitoba where over one half of the firearm deer hunters prefer to hunt.

The use of primitive weapons for deer hunting continued to grow in popularity with archery licence sales exceeding 2,000 in 1986. The number of hunters using muzzle-loading rifles also grew, and the areas open to muzzle-loading hunters were increased substantially in 1986. It is expected that muzzle-loading licence sales will soon exceed 500.

Rifle hunters had a 50% to 60% success rate in bagging a deer during an "any deer" season and about a 30% to 35% success rate in "bucks only" seasons. Bowhunters on average were 16% successful and hunters using primitive rifles had a 20% success rate.

It is difficult to estimate accurately the number of deer taken each year by Treaty Indians exercising their Treaty rights. However, field officers' reports revealed that 75% of the deer taken were does and fawns. Treaty Indians hunted deer almost year-round on lands to which they had the right of access.

This uncontrolled hunting on wildlife management areas and other Crown lands has resulted in a scarcity of deer in many of these areas, especially in the Interlake and Westlake regions.

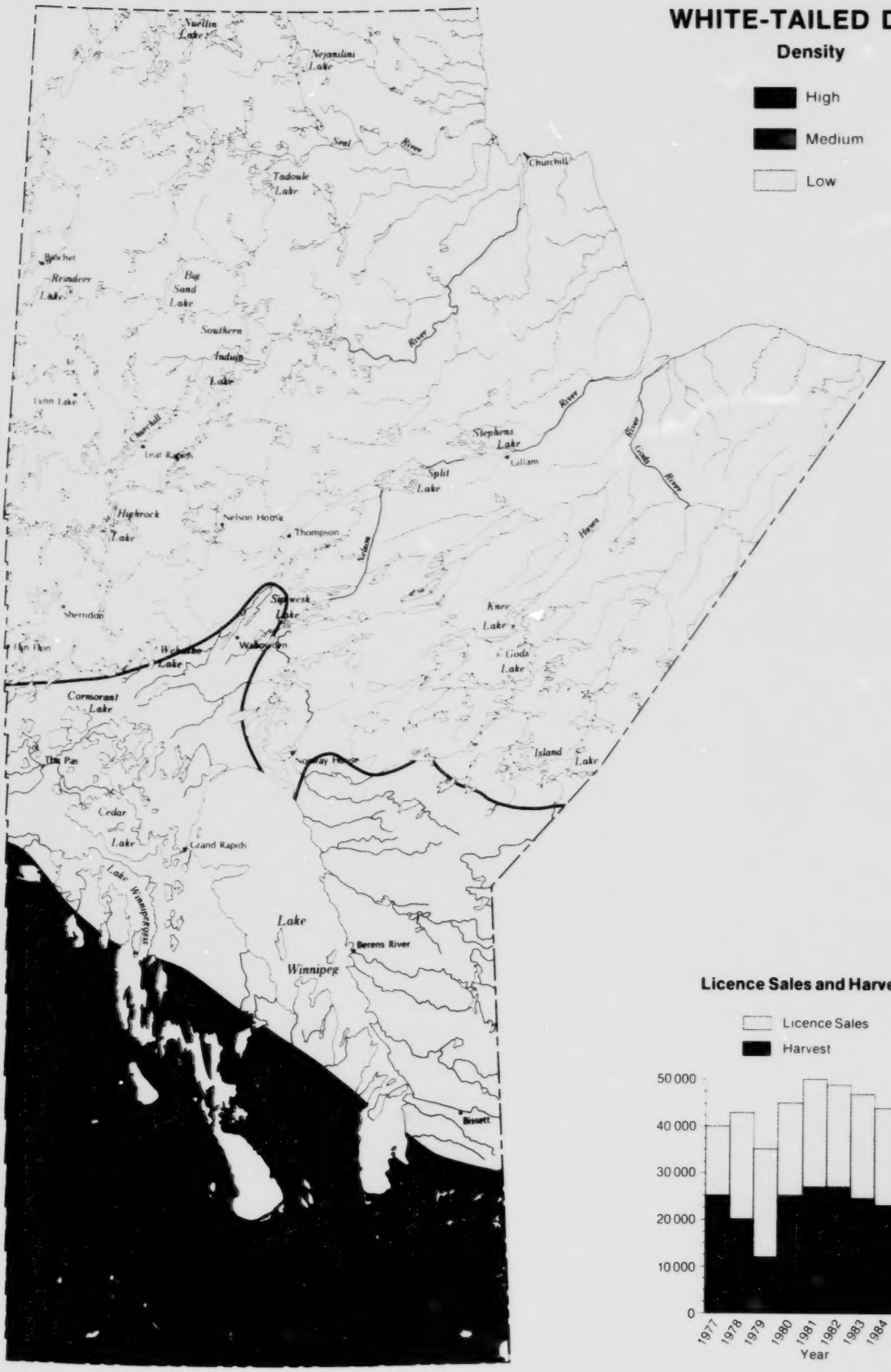
Capability to Meet Demand

Over the next five years the abundance and proximity of white-tailed deer to populated areas will continue to provide excellent

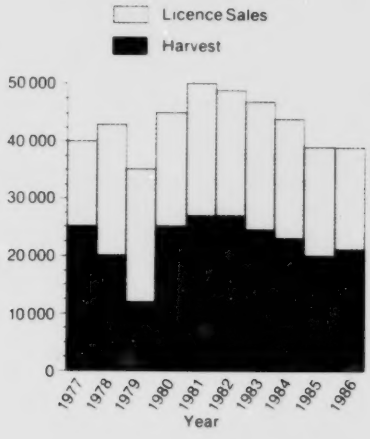
WHITE-TAILED DEER

Density

- High
- Medium
- Low



Licence Sales and Harvest



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opportunities for interpretation and observation. Deer will also meet the demand of licenced hunters, provided that bag limits remain conservative and the deer population is not decimated by severe winter weather. In those areas where undue pressure is placed on deer by unlicenced hunters, populations could decline to seriously low levels.

Habitat loss in southern Manitoba will increase the vulnerability of deer to winter weather, predators and hunting, but it is difficult to predict exactly when this factor will reach the critical point and result in a major decrease in deer numbers. Should that decrease occur, it will be necessary to reduce the harvest of deer by licenced hunters.

Woodland Caribou

The woodland caribou is classified as 'rare' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is found in low numbers throughout the central portion of the province. Woodland caribou occur naturally in low numbers so are not considered a threatened species.

Woodland caribou population surveys were not carried out between 1982 and 1986, but it is believed that the population remained in the vicinity of 4,500 animals. The largest portion of the population occurred in the Hudson Bay lowlands.

Trends in Use

Woodland caribou were sought primarily by licenced and subsistence hunters. Licenced hunting activity was relatively low due to the remoteness of most caribou herds. It is believed that most caribou hunters were primarily moose hunters who purchased a caribou licence in anticipation of happening upon a woodland caribou. Once located, woodland caribou are easily hunted and killed. As access to formerly remote caribou range increases, more intensive management programs will be necessary to ensure that an over-harvest of the somewhat limited resource does not occur. There is no accurate estimate of the illegal harvest of caribou or the kill by Treaty Indians, but it is believed that the former was minimal while the take by Treaty Indians was not a major limiting factor.

No systematic collection of hunting data was undertaken prior to 1985, but considerable effort was made to collect information from hunters in the northeastern part of the province. Hunter surveys will be expanded in the upcoming five-year period.

Capability To Meet Demand

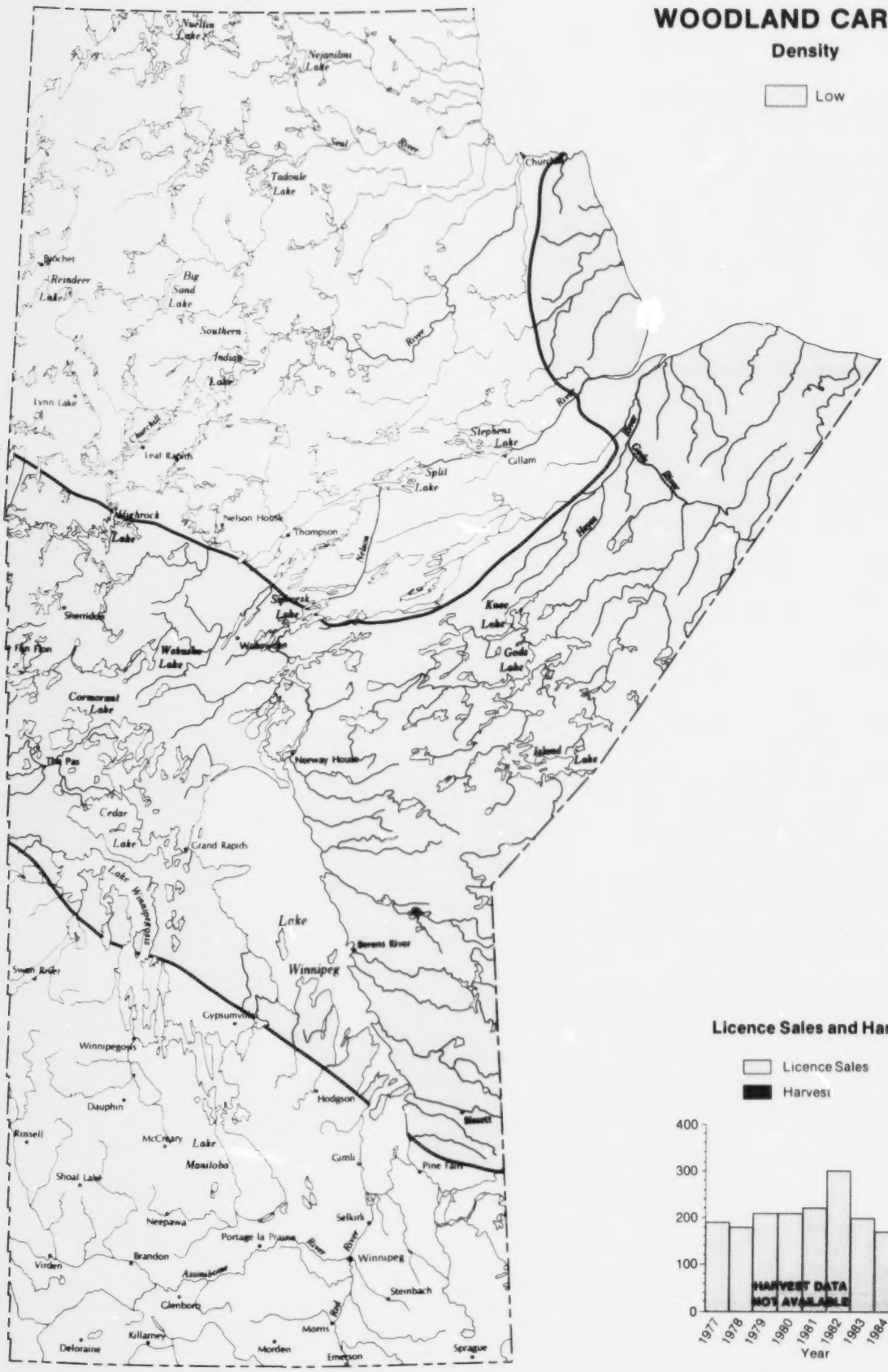
Most caribou herds can sustain the present demand for recreational hunting, but smaller herds, numbering 100 - 200 animals, could be placed in jeopardy by uncontrolled hunting. Two factors, protection and controlled harvest, must be considered if supply is to meet the existing demand and if populations are to increase. The harvest by all users must be carefully monitored to ensure that it takes into consideration the low reproductive rate of woodland caribou Also, as development proceeds (i.e. logging and access roads), close monitoring must occur to ensure that critical habitats are protected and that access to caribou wintering areas is controlled. Improved access to wintering areas could lead to uncontrolled hunting and a serious depletion of populations.

There is potential for non-consumptive use of woodland caribou in areas such as Atikaki, Nopiming and Grass River Provincial Parks. Caribou would attract greater attention if programs were developed to heighten public awareness in these areas.

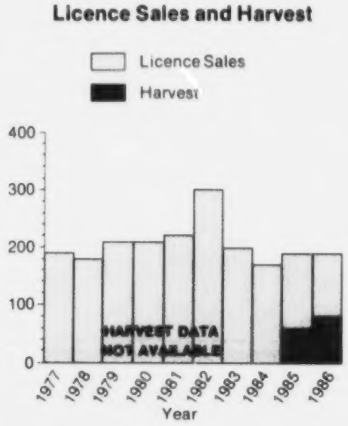
WOODLAND CARIBOU

Density

Low



Licence Sales and Harvest



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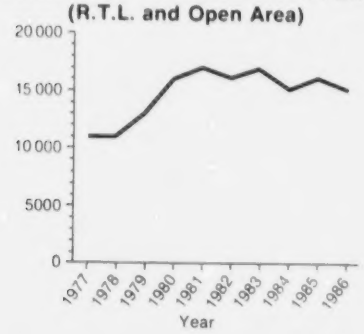
Furbearers

Most of Manitoba's furbearer populations remained stable or increased in number. Exceptions were the long-tailed weasel and the badger which have declined due to changing agricultural practices in the past 30 years. The former has been designated as threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Lynx populations also declined as a result of a period of high demand which coincided with a low point in their population cycle. Consequently, the season for lynx was closed in 1985. Muskrat populations fluctuated due to a loss of habitat.

Trends in Use

Furbearing animals were important to the economic and social well-being of many Manitobans. During the reporting period, 15,000 trappers harvested pelts worth $5 million annually. Approximately 60% of the fur produced came from 3,000 trappers in the Registered Trapline (R.T.L.) sections. The remainder was produced by 12,000 trappers in the Open Area, located mainly in southern Manitoba.

NUMBER OF LICENCED TRAPPERS
(R.T.L. and Open Area)



The harvest of furbearing animals was closely related to market demand and, to some extent, tradition. In recent years, long-haired fur has become more fashionable resulting in increased prices for species such as lynx, fox and coyote. Demand for beaver and muskrat remained relatively constant, but occasionally was influenced by price.

Recently, anti-trapping groups have directed their efforts at the fur market. Pressure was put on foreign buyers through governments of countries where much Canadian fur is sold. If anti-trapping efforts are successful, the demand for fur will decrease and a viable source of income, in areas where there is little or no alternative employment, will be lost.

Capability to Meet Demand

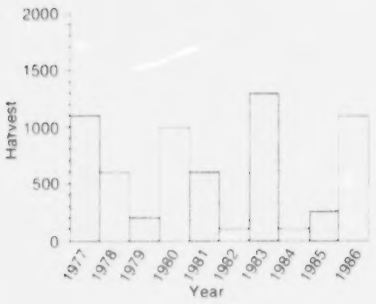
Regardless of long term trends, variables such as population cycles and short term changes in aquatic conditions may change the supply of wild fur.

Loss of habitat due to agricultural activity and flooding from hydro-electric projects has had a significant affect on muskrat populations. Problems facing muskrat are critical, and without management the capability of this species to meet expected demands will be diminished.

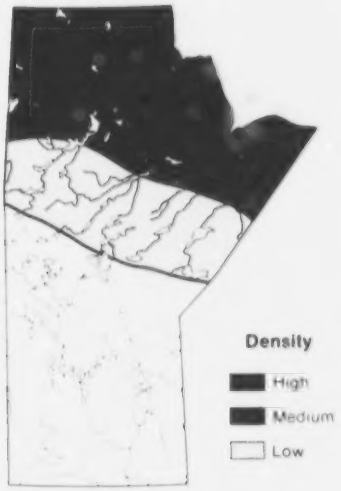
Forestry operations have affected upland furbearers such as fisher, marten and lynx. Cutting practices, if not modified to include habitat preservation and restoration, may significantly reduce the habitat of these species.

In the open trapping areas where licence sales are not limited, furbearer populations, except for beaver, are likely being harvested close to the maximum allowable rate. In the R.T.L. areas, however, it is estimated that harvests could be increased by 50% without causing populations to decline.

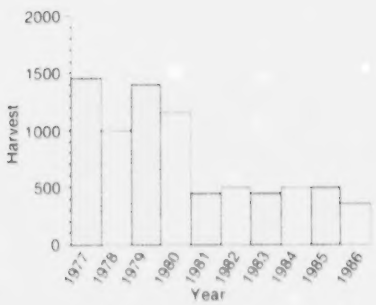
ARCTIC FOX



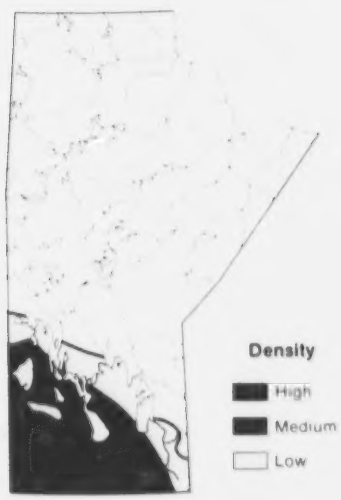
Arctic fox: The arctic fox population is cyclic, peaking in 1985/86. Within the parameters of its population cycle, numbers have remained stable over the reporting period.



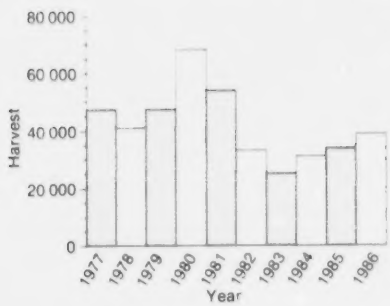
BADGER



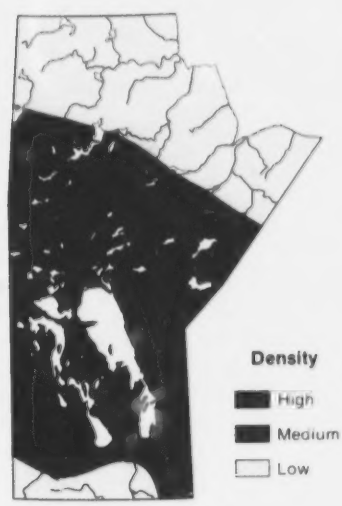
Badger: Due to rapid agricultural development, the badger population declined over the past five years. The decline is attributed to habitat loss due to intensive agricultural development.



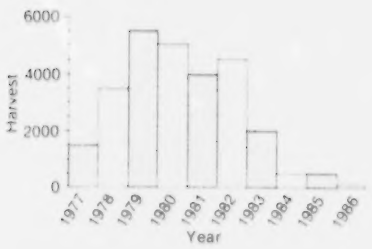
BEAVER



Beaver: The beaver population is abundant throughout the province and has increased over the reporting period. This trend was influenced by reduced trapping pressure in response to fur prices.

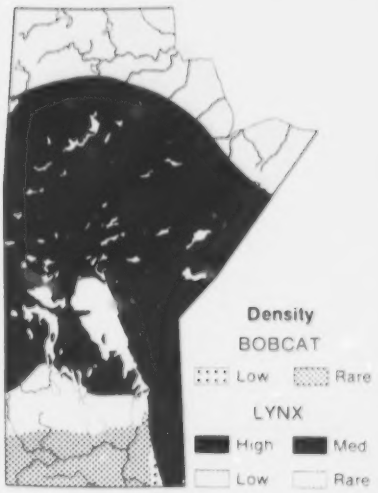


BOBCAT AND LYNX
(Combined Harvest)

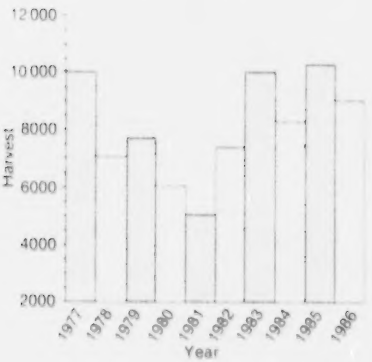


Bobcat: In Manitoba, the bobcat population is on the northern edge of its North American range. The population, therefore, has remained low.

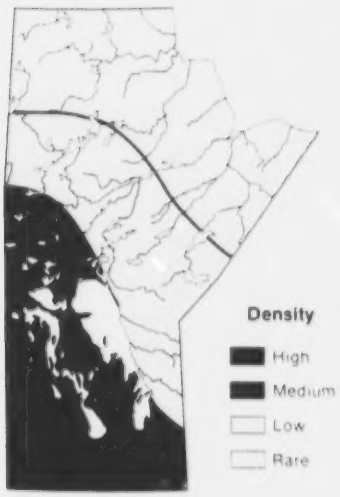
Lynx: Over the past five years, the lynx population continued to decline to its lowest level in the past thirty years. The season was closed in 1985 and a quota system introduced in 1986 to assist in population recovery.



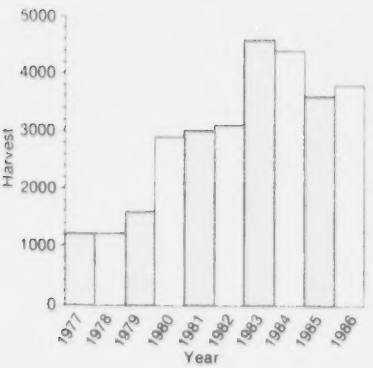
COYOTE



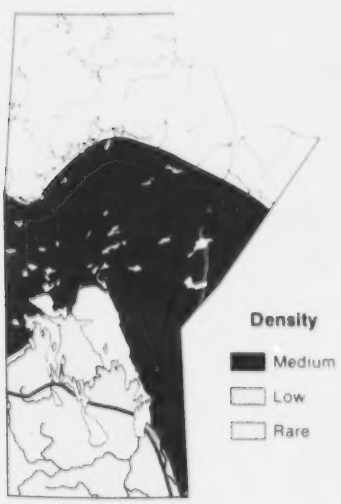
Coyote: The coyote population remained stable throughout the first three years of the reporting period but now appears to be increasing.



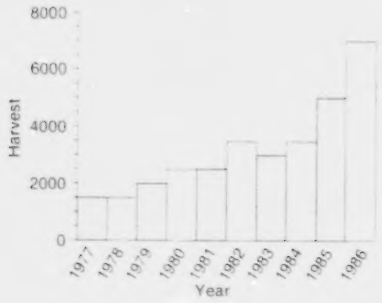
FISHER



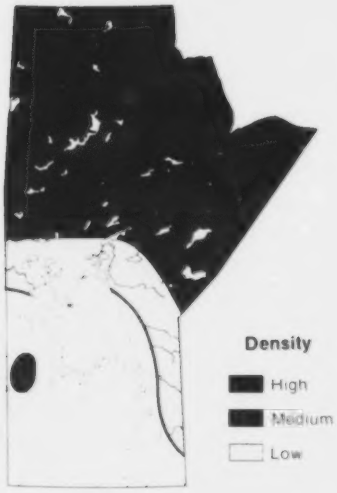
Fisher: The population density of the fisher appears to have declined but the occupied range of the species has increased. This trend is due to both the cyclic nature of this species and increased trapping pressure. The trapping season has been shortened to ensure an adequate supply.



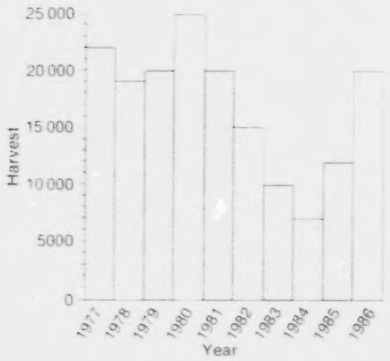
MARTEN



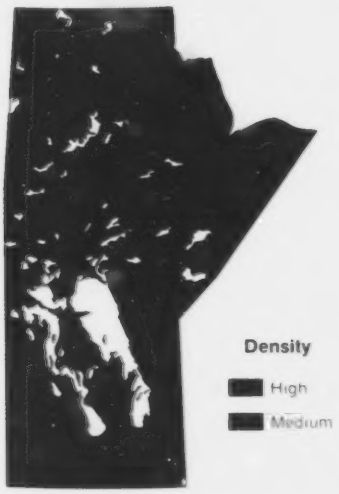
Marten: Marten have increased rapidly since 1982. With this population increase has come an expansion of the range used by the species.



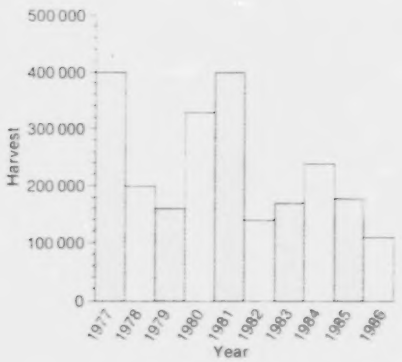
MINK



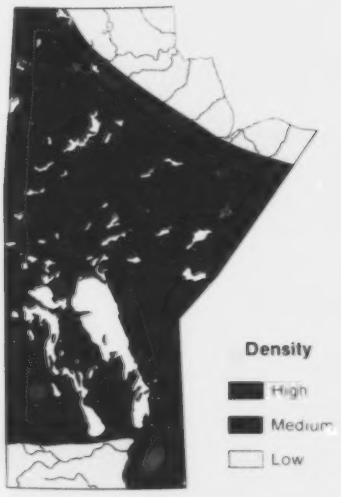
Mink: The mink population is stable and the harvest is consistent with long-term harvest levels.



MUSKRAT



Muskrat: Muskrat populations fluctuated from year to year according to habitat and water conditions. The present population is relatively low.



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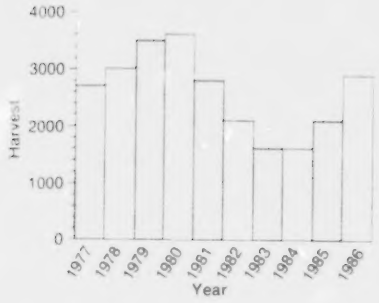
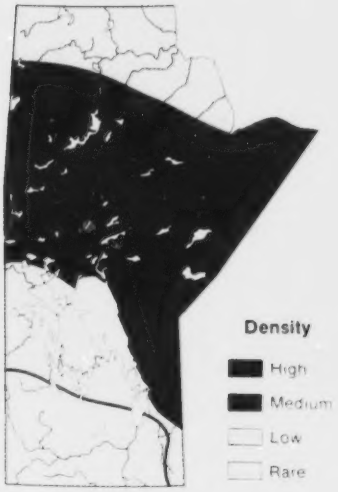
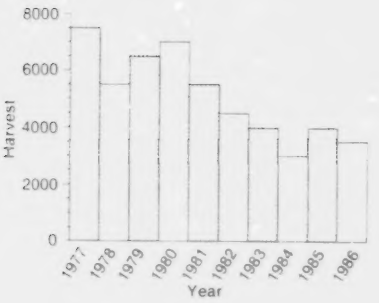
OTTER



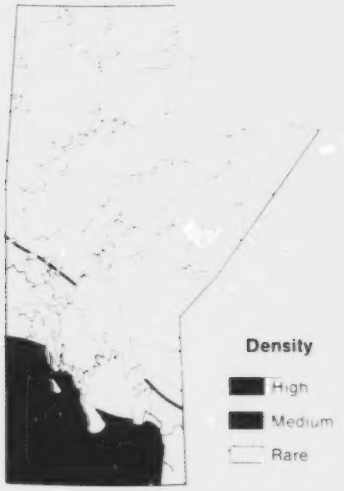
Otter: The otter population remained stable in registered trapline areas and increased slightly in the southeastern area.



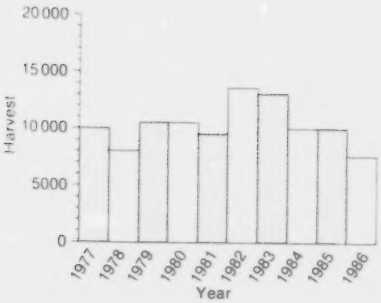
RACCOON



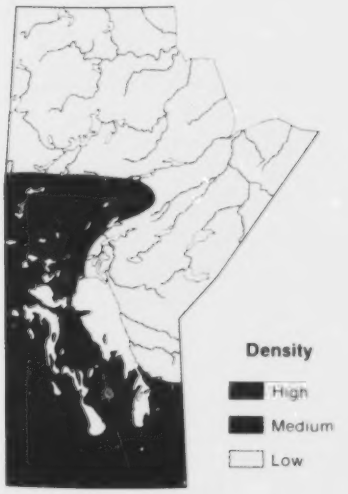
Raccoon: Although the raccoon is at the northern edge of its North American range the population remained stable throughout the reporting period.



RED FOX



Red Fox: The red fox population is stable or increasing in most areas.



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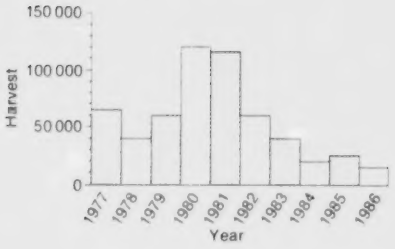
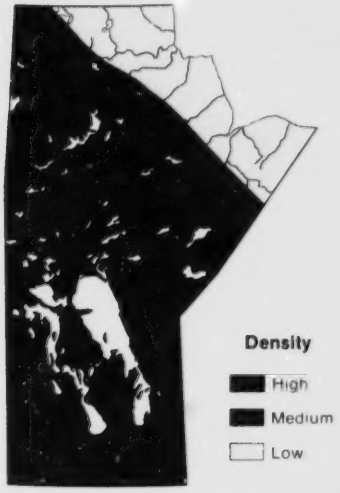
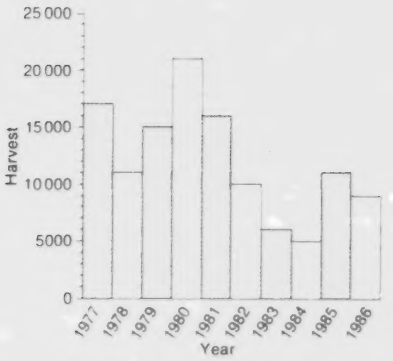
RED SQUIRREL



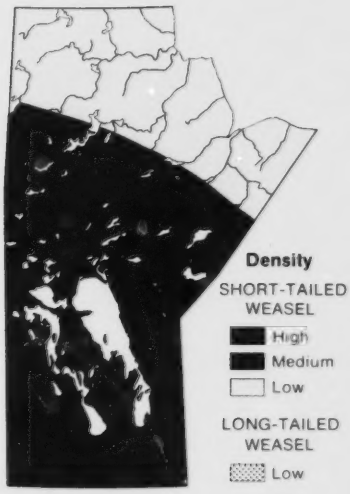
Red squirrel: The red squirrel population has remained stable. Lower harvests in recent years are due to low pelt value.



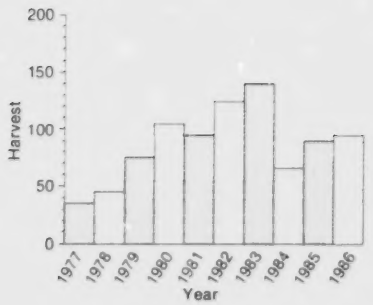
WEASEL



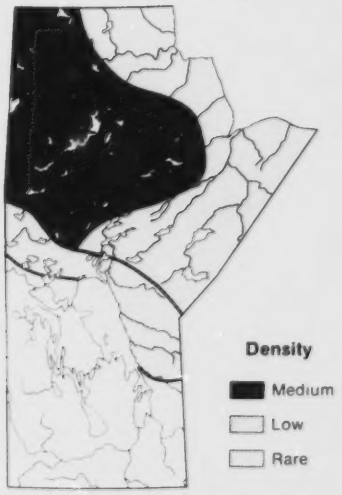
Weasel: Short-tailed weasel populations are stable, while long-tailed weasel populations have declined due to loss of habitat.



WOLVERINE



Wolverine: Wolverines are rare in Manitoba. Although the population is low, it is stable with some expansion to the south and east of its former range.



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Upland Game Birds

Three species of native grouse and two species of ptarmigan are found in Manitoba. Two introduced species, gray partridge and wild turkey are also found in southern areas of the province. Ring-necked pheasants and greater prairie-chicken are considered wildlife under the Act, but no viable wild populations currently exist in Manitoba.

Native upland species are cyclic over an approximate 10-year period with ruffed grouse populations showing the greatest variation in numbers. Due to their widespread distribution and habitat preference, accurate population estimates are not available on a provincial basis. Both sharp-tailed grouse and ruffed grouse populations were high in 1970 and 1978 and are expected to peak once again within the next five-year period.

Wild turkey numbers continued to increase slowly from their initial introduction in 1958. Re-establishment efforts by private organizations continued throughout the reporting period. The estimated population in 1986 was in excess of 1,000 birds.

Ring-necked pheasants have been released in southern Manitoba for more than 40 years but, due to inadequate cover and severe winters, these releases have been largely unsuccessful. In 1985 and again in 1986, the Manitoba Wildlife Federation released approximately 1,500 ring-neck/Bohemian cross pheasants into the wild. Local wildlife associations and private individuals also were involved in pheasant releases. These releases are expected to continue for three more years with continued monitoring by Federation representatives to determine population status.

Trends in Use

Grouse and ptarmigan were frequently encountered by outdoor enthusiasts, photographers and naturalists, and were sought after each fall by resident and non-resident hunters. Trends in use were closely reflected by trends in grouse populations and abundance. In years of high grouse populations, more than 30,000 hunters bagged approximately 200,000 ruffed grouse, 100,000 sharp-tailed grouse and 40,000 spruce grouse. At cyclic lows, reduced hunter effort resulted in fewer than 20,000 birds being harvested.

Surveys conducted in 1986 indicated that grouse populations should peak in most areas of the province within the next one to two years. As the number of grouse hunters is strongly correlated with population levels, it is expected that hunter numbers will increase through 1988 and begin to decline again by 1990.

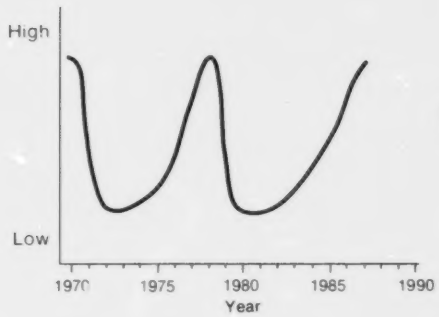
Due to limited distribution and abundance, gray partridge were not heavily hunted in Manitoba. Hunters generally harvested partridge while in pursuit of other game birds. Provincial harvest during the past reporting period was low.

Hunting of wild turkeys continued to be restricted due to the limited distribution and abundance of these birds. There was no hunting season for pheasants in Manitoba.

Capability to Meet Demand

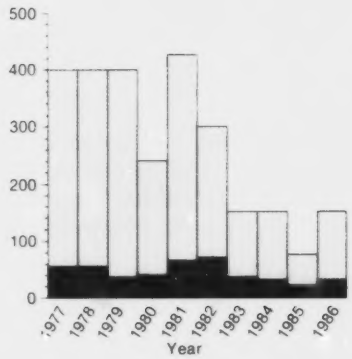
As wild grouse populations continue to increase, the demand for grouse by Manitoba game bird hunters will be met. During 'lows' in the population cycle, however, demand will

POPULATION AND HARVEST TREND



Ruffed and Sharp-tailed Grouse

LICENCE SALES AND HARVEST



Wild Turkey

Licence Sales

Harvest

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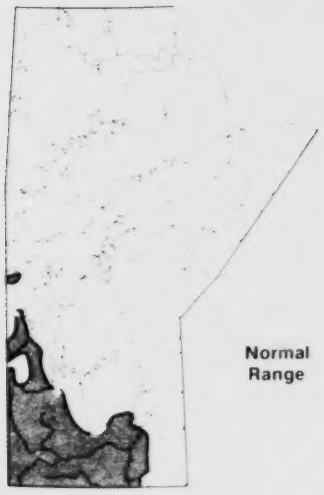
RUFFED GROUSE

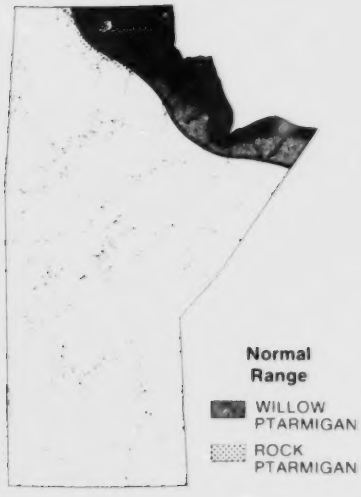
SPRUCE GROUSE

SHARP-TAILED GROUSE

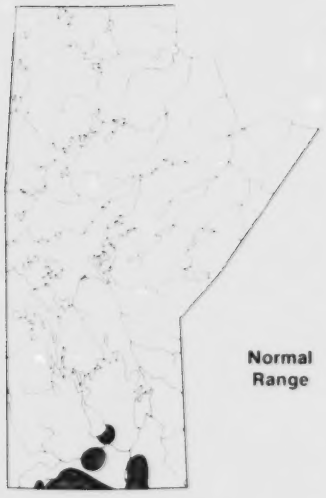
GRAY PARTRIDGE



PTARMIGAN



WILD TURKEY



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exceed supply. These cyclic fluctuations will continue, given no major losses of upland habitat. Populations of wild turkeys and ptarmigan will continue to meet hunting demand.

Migratory Game Birds

Twenty-two species of ducks and four species of geese are found in Manitoba at various times. These species use the province's marshes to either breed, moult or stage during the spring and fall migration periods. Of the four species of geese, only Canada geese and snow geese nest in Manitoba.

Ducks were distributed throughout the province but the greatest diversity and highest breeding densities occurred in the agricultural region of Manitoba. Waterfowl from Manitoba were harvested along the Mississippi, Atlantic and Central Flyways through the United States to Cuba and Central and South America.

The fall flight of ducks from Manitoba varied annually but was estimated at between 2.5 million and 3.0 million birds. Canada geese, which breed in Manitoba and the high arctic, provided a fall goose flight of approximately 500,000 birds. Snow geese, breeding primarily in the Northwest Territories and at La Perouse Bay, accounted for a further 1.0 million birds. More than one-half of this total fall goose flight stopped in southern Manitoba during migration. Manitoba now ranks as one of the premier locations in the world to view and photograph geese.

Mallard, pintail, blue-winged teal and canvasback populations declined, largely due to the loss and degradation of wetland and associated upland habitat.

The loss of wetland or nesting habitat to agriculture has reduced hen nesting success, recruitment and ultimately fall populations. This will continue to have negative effects on the ability of prairie nesting duck species to sustain population levels comparable to the 1970's. Breeding populations of mallards have declined from 560,000 pairs in 1955 to 342,000 pairs (1972-1981 average) and 305,000 pairs (1982-1986 average). Similar declines also occurred for several other species of ducks. Unlike previous downward population trends (that were specific to one or at most a few areas) the present trends are evident throughout the breeding range in North America.

Trends in Use

In 1979 and 1980, Canada and the United States each implemented a five-year period of stabilized hunting regulations for their respective jurisdictions. During this period, population inventory, population mortality and hunter performance studies were undertaken to address the variables influencing waterfowl. Preliminary results of these studies have revealed some valuable observations.

- Regulations in Manitoba were shown to affect survival rates. Adult female survival rates decreased during the Stabilized Regulation Period (Liberal Framework) as compared to increased female survival rates during the 1973-1978 Restrictive Regulation Period;
- Of the 4,079 ponds surveyed, 52% of the ponds' margins were negatively affected by agricultural practices and 17% of the ponds themselves also were negatively affected by agricultural practices. The consequences were manifested in much lower nesting success. Only 13-23% of nests were successful, and of these, only 11% of ducklings reached the flight stage. Predation was the

Average Annual Harvest of Common Duck and Goose Species.

Species	1972-1976	1977-1981	1982-1986
Mallard	171,300	206,500	125,300
Scaup	26,500	18,700	19,300
Ring-necked duck	11,000	8,800	15,100
Pintail	16,700	16,100	11,400
Blue-winged teal	13,600	11,700	9,300
Green-winged teal	11,400	13,700	7,900
Gadwall	11,600	13,800	9,000
Wigeon	11,800	10,000	6,600
Redhead	8,200	6,900	7,000
Canvasback	5,300	4,600	4,600
Snow geese	32,000	64,200	78,800
Canada geese	66,600	78,800	87,200

major factor contributing to low nesting success and recruitment rates;

- Very few hunters attained or achieved the legal daily bag limit. The average daily bag per successful waterfowl hunter was 1.9 waterfowl (1979-1983 average);
- Hunters, unaware that they and their entire hunt had been under observation, were asked after their hunt to estimate the number of birds they crippled or failed to retrieve. When interviewed, hunters reported 15% and 11% crippling losses for ducks and geese respectively. The crippling losses, based on the observation period, were 46% and 44%, respectively, for ducks and geese.

The conclusions drawn from Manitoba studies and the other two prairie provinces are being reviewed, compared and correlated with the conclusions drawn from the stabilized regulation period in the United States.

The licenced harvest of ducks in Manitoba was 208,000 in 1986. Of this total duck harvest, 114,000 were mallards. Both the total duck and mallard harvest levels declined substantially from the 1979 harvest of 383,000 total ducks and 244,000 mallards. Mallards continued to be the preferred species of Manitoba, prairie Canada and other Mississippi Flyway hunters. Two other species, the ring-necked duck and lesser scaup, also were important to Manitoba hunters. They ranked second and third, respectively, of the retrieved annual harvest.

With the decline of duck populations, Manitoba's duck harvest also has decreased. However, the Manitoba waterfowl hunter now has become a more active goose hunter to the degree that Manitoba now ranks as the major harvest area in North America. The province's goose harvest exceeded the duck harvest for the first time in 1985 when 207,400 geese were harvested, compared to 174,500 ducks. Despite the increasing goose population and harvest, resident waterfowl hunter numbers declined substantially over the last five years. This decline has occurred across North America and is not a situation unique to Manitoba. Non-resident hunter numbers increased due to restrictive regulations in the United States and the opportunity in Manitoba to fill bag limits with less competition than in the U.S.

It is not known how many native people hunted waterfowl because they do not require a Migratory Game Bird Hunting Permit. Until a few years ago, their harvest was estimated at approximately 10,000 ducks and geese. A 1984 study conducted by the Treaty and Aboriginal Rights Research Centre Inc. (T.A.R.R.) revealed that the annual domestic harvest by native people was over 50,000 total waterfowl (45,000 ducks and 6,000 geese). The T.A.R.R. survey harvest data must be considered as a minimum harvest level, since only 26 bands of the 54 Manitoba Indian Bands are represented by the survey. Of the bands not represented, many are located in southern Manitoba, near or within major spring and fall waterfowl staging areas.

Capability to Meet Demand

An overriding factor in the supply of waterfowl (particularly ducks) is the quantity and quality of nesting habitat. Conflicting uses of the upland areas associated with the wetlands have contributed greatly to the long term declines in most duck populations in Manitoba and in other jurisdictions, including Alberta, Saskatchewan and the United States. Low recruitment, an indicator of poor quality nesting

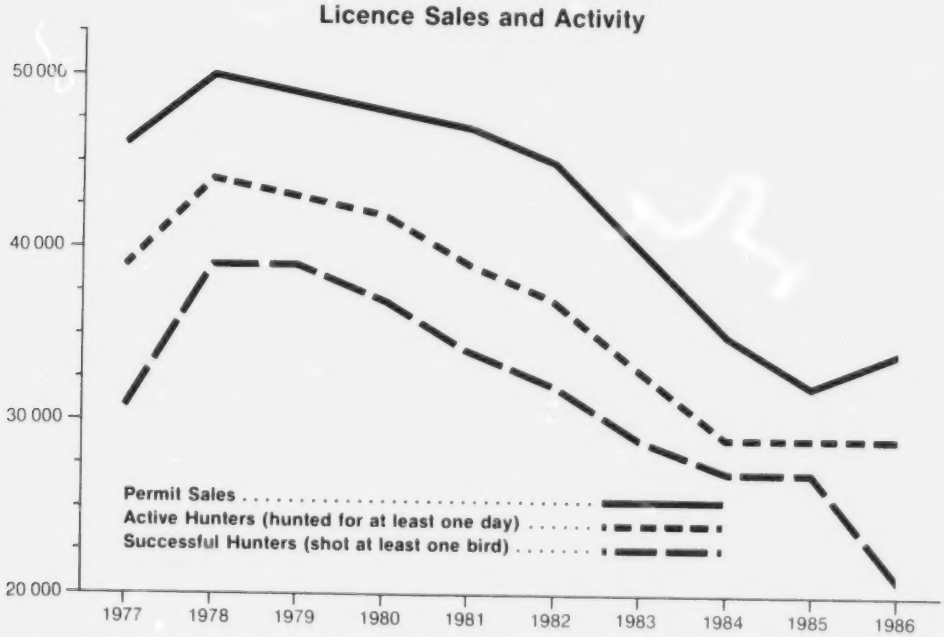
habitat, is a significant factor limiting the recovery of some duck populations. As well, high harvest levels of adult females in Manitoba and high harvest levels in the United States of all age and sex components, especially during the periods of poor nesting conditions, have been major factors contributing to the present downward trends.

Not until 1985 did jurisdictions in Canada and the United States implement restrictive regulatory season frameworks to achieve a 25% reduction in each jurisdiction's respective harvest. This action was in response to the historically low population levels of breeding ducks. The restrictive framework has been in place since 1985 and is expected to continue for the foreseeable future.

Most goose populations are relatively stable but there are exceptions. High populations and limited availability of vegetation within tidal flat areas on snow geese breeding grounds could cause problems in the future. The high harvest of the Eastern Prairie Population of Canada Geese throughout the Interlake area, especially at Oak Hammock Marsh, also may be cause for concern. The post-season population is presently below established target levels.

The Rochester-Interlake Giant Canada Population faces some uncertainty. Rochester will soon be converting the city's electric power supply from a thermal power plant to electric power from Manitoba. This plant was responsible for the open water where the geese winter, so this population will be forced to winter elsewhere, perhaps in a less protected area.

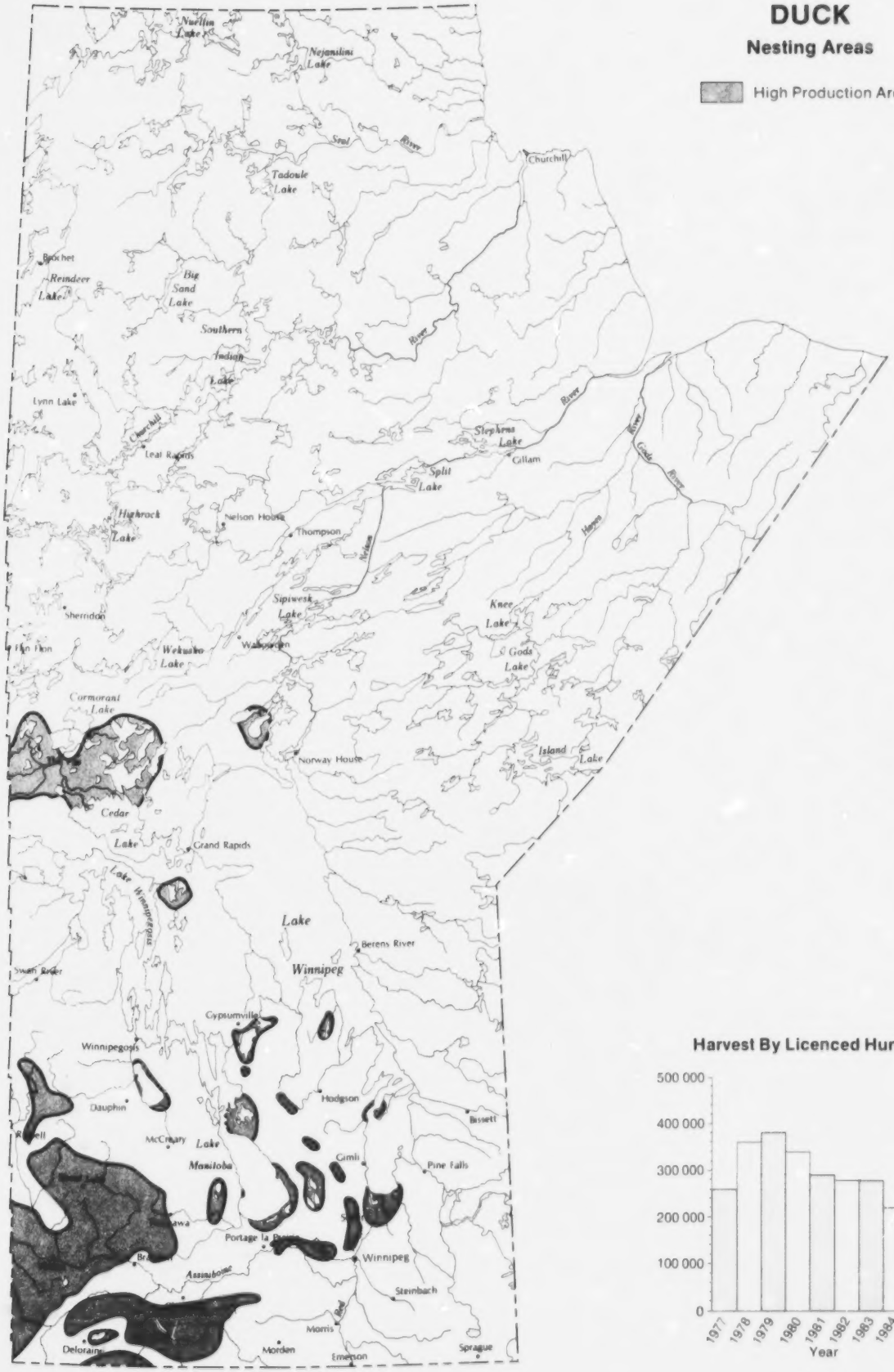
MIGRATORY GAME BIRD
Licence Sales and Activity



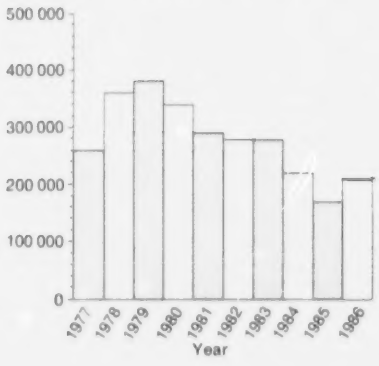
DUCK

Nesting Areas

High Production Areas



Harvest By Licenced Hunters



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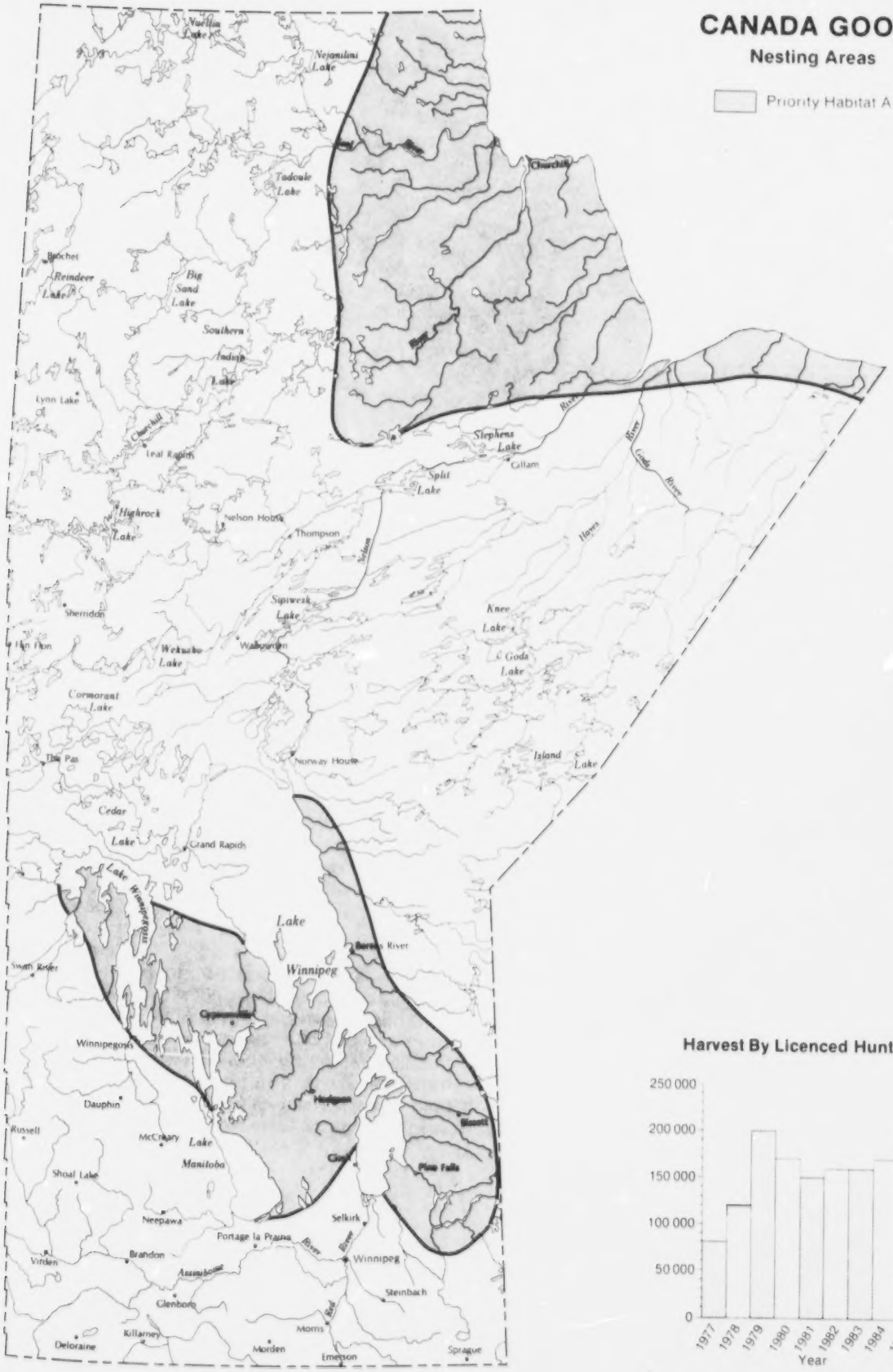
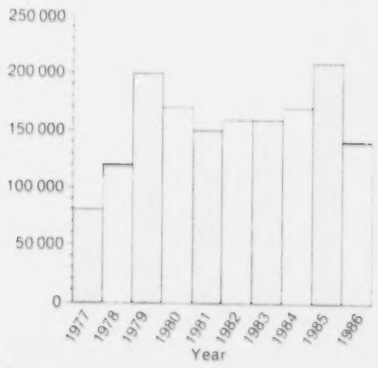
CANADA GOOSE

Nesting Areas

Priority Habitat Area



Harvest By Licenced Hunters



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Non-game Birds

The population status of the birds listed below varies from species to species. Many have populations that are sufficiently low or potentially vulnerable to warrant protected species designation. Others are listed because they receive no other protection under federal or provincial legislation.

- White Pelican
- Double-crested Cormorant
- Greater Prairie Chicken
- All vultures, eagles, hawks, osprey and falcons
- All owls
- Kingfisher
- Blue Jay
- Gray (Canada) Jay
- Common Raven

Three species of raptors—the burrowing owl, ferruginous hawk and the peregrine falcon, are considered endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Trends in Use

As is the general trend in North America, there was growing public interest in birds of prey, colonial water birds and non-game birds, for viewing, photography and education. Trends in sales of natural history materials and bird feeding supplies indicated that the non-consumptive use of wildlife was extensive and growing rapidly. According to a 1981 report, 85% of Manitobans took part in some form of wildlife related activity and, adjusting for inflation, spent in excess of $130 million on wildlife related trips, outings and residential activities (eg. bird feeding) in 1986.

Capability to Meet Demand

Public demand for non-game species is generally being met and will continue to be met provided that the birds and their habitats are maintained. Several species, due to habitat destruction, environmental pollutants or human disturbance, may be in jeopardy. For these, the capability to meet demand is limited. These include several grebe species, the common loon, American bittern, piping plover, Baird's sparrow, grasshopper sparrow, loggerhead shrike, upland sandpiper and chestnut-collared longspur.

There is a need for continued education regarding the value and habits of protected species, and a need to identify and maintain nesting habitat for waterbirds and birds of prey. Ongoing monitoring is also necessary to determine the effects of toxic chemicals (notably mercury) in fish-eating birds and DDE related compounds on avian reproductive and survival rates.

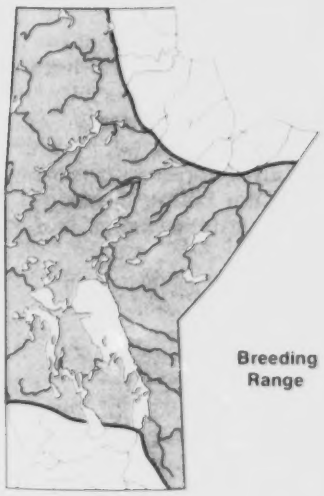
The following pages highlight some of the protected species which have been of particular interest over the past five years.

AMERICAN WHITE PELICAN

American White Pelican
This colonial waterbird, which nests on islands in Manitoba's major lakes, has increased its numbers greatly throughout its Canadian range in the last 15 years. Approximately 30,000 nesting pairs, or nearly one-third of the world's breeding population was found in Manitoba. A proposal to remove this species from the endangered species list was under review in Canada.

BALD EAGLE

Bald Eagle
Considered endangered in the eastern United States, bald eagles continued to do well in Manitoba. Manitoba's bald eagle population was estimated at 7,000-10,000 birds, including 1,500 breeding pairs. Since 1982, up to 10 young eagles have been supplied annually to help re-establish populations along the eastern seaboard of the U.S.A.



BURROWING OWL

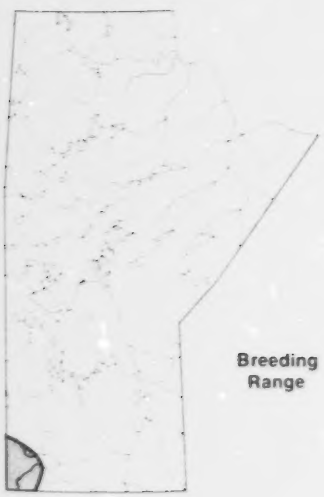
Burrowing Owl
Burrowing owl populations have decreased due to late spring snowstorms, habitat destruction and the increased use of toxic chemicals. Nesting surveys began in 1982 and continued through 1986. During this time, the population declined by 50% to an estimated 30-40 breeding pairs.

DOUBLE-CRESTED CORMORANT

Double-crested Cormorant
Cormorant populations have increased in the last 15 years to an estimated population of 250,000 birds or 100,000 breeding pairs in 1986. Although fishermen often link the cormorant to declining fish populations, recent studies indicated that its effect on commercial fish species is negligible.

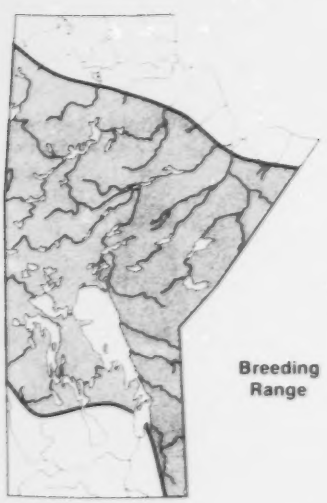
FERRUGINOUS HAWK

Ferruginous Hawk
The ferruginous hawk has declined in numbers throughout much of its North American range due to the destruction of nesting and feeding habitats. In Manitoba, however, a small breeding population became re-established after an absence of nearly 50 years.



GREAT GRAY OWL

Great Gray Owl
Classified 'rare' in Canada, the great gray owl is fairly common in southeastern Manitoba, which is a breeding ground for owls from the surrounding area, including Ontario. The total population of great grey owls in Manitoba was estimated at 1,500 birds in 1986.

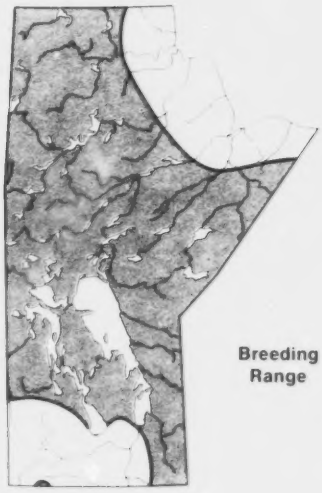


PEREGRINE FALCON

Peregrine Falcon
The peregrine falcon has declined throughout its North American range since the 1950's due to the effects of DDT and other toxic chemicals. In Manitoba, the total population was estimated at less than 15 birds.

OSPREY

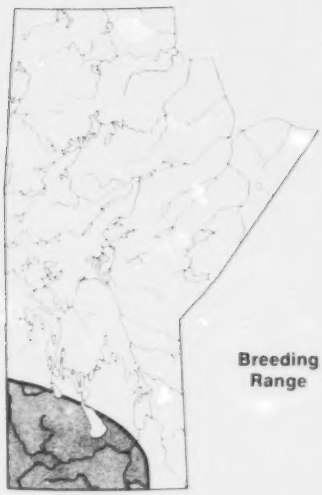
Osprey
The osprey bred sparsely throughout the non-agricultural portions of the province. Although its population appeared to be increasing throughout much of its North American range, this trend was not evident in Manitoba. Toxic chemicals including mercury and organo-chlorine pesticides and disturbance are major concerns.



Breeding Range

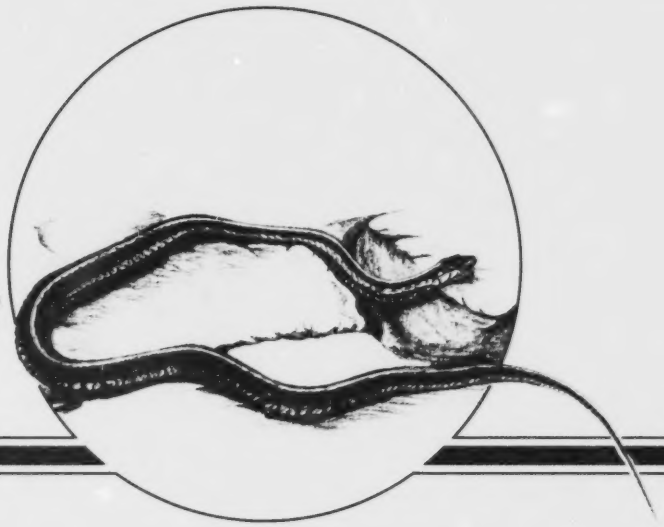
SWAINSON'S HAWK

Swainson's Hawk
The Swainson's hawk was relatively common throughout the agricultural areas of southern Manitoba. A healthy population of 10 to 15 breeding pairs has become established in the city of Winnipeg.



Breeding Range

Amphibians and Reptiles



Nine species of amphibians and reptiles are protected by The Wildlife Act. The exact population levels of these animals are largely unknown. Thirteen other species also are found in Manitoba but are not protected. Together, they represent an unusual and fascinating aspect of Manitoba's wildlife community.

Trends in Use

Reptiles and amphibians were valuable to Manitobans for a variety of reasons, both commercial and non-commercial.

Northern leopard frogs, tiger salamanders and red-sided garter snakes were commercially harvested in the Interlake and Westlake districts and sold annually to biological supply companies in Canada, Europe and the United States. Tiger salamanders were also harvested in small numbers on an irregular basis. Leopard frogs, recovering from diseases that decimated leopard frog populations across North America and precluded Manitoba's commercial harvest for 7 years, have again become numerous. The demand for leopard frogs continued to be high, with a total dollar value to Manitobans of $72,000 in 1986. The commercial demand for garter snakes was also high, reaching an average annual dollar value of $30,000 between 1982 and 1986.

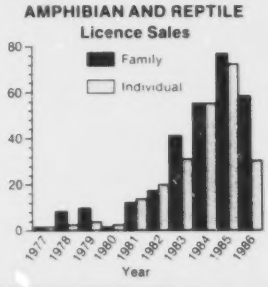
Perhaps the most significant contribution of amphibians and reptiles to Manitobans was the diversity they added to the local fauna. Although most species remained relatively obscure, the garter snake pits in the Narcisse Wildlife Management Area drew an ever-increasing number of visitors during the reporting period.

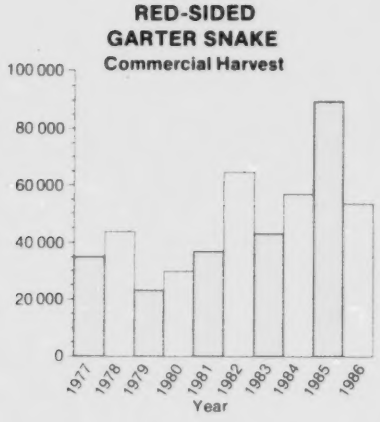
The department increased its efforts to accommodate both commercial and non-commercial uses of the resource. In 1983 four snake dens in the Narcisse Wildlife Management Area were closed to commercial harvest so that they could be used exclusively for public viewing, education and scientific study. This area was expanded in 1986 to include the entire Narcisse Wildlife Management Area and the Narcisse Community Pasture. The department also supported garter snake research activities in these areas.

Capability to Meet Demand

Public demand for most amphibians and reptiles is generally being met and will continue to be met provided that the species and their habitats are maintained.

Leopard frog populations are increasing and can again meet current and anticipated demands from commercial users. The number of licensed snake pickers, the commercial demands for snakes, the small number of snake dens not yet exploited, the low productivity of snakes and the picking pressure put upon existing dens is a matter of concern and will have to be carefully weighed in planning or amending future seasons.

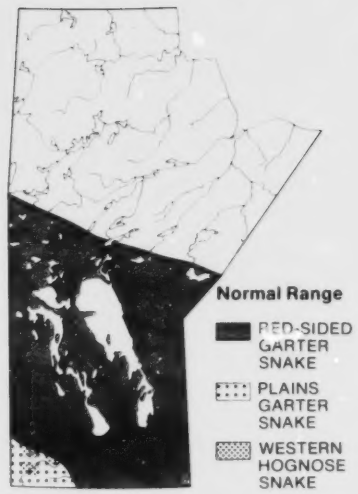




Red-sided garter snake: Total population figures are unknown, but studies were underway to evaluate populations and the effects of the commercial harvest on this species.

Western plains garter snake: Mainly distributed in the agricultural areas of southern Manitoba, populations have been affected by a loss of grassland and other habitats. No large concentrations of dens are known.

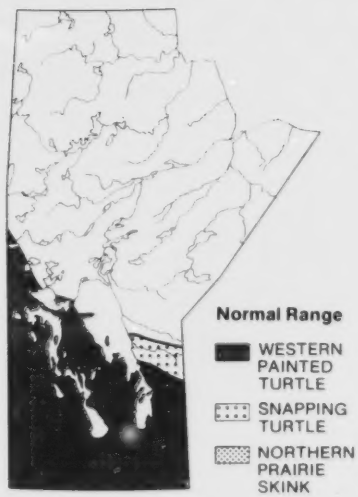
Western hognose snake: Found only in areas of sandy soil, hognose snake habitat occurs in Spruce Woods Provincial Park and other protected sites. Populations were believed to be stable but, owing to their secretive habits, were infrequently observed.



Western painted turtle: This turtle occupied a larger range than did the snapping turtle, hence there was a larger population. No definite trends were discernible, but populations were believed to be stable.

Snapping turtle: This large reptile occurred primarily in the Souris and Assiniboine rivers and in the lakes and streams of the Whiteshell Provincial Park. Its secretive nature makes it difficult to assess its population or trends.

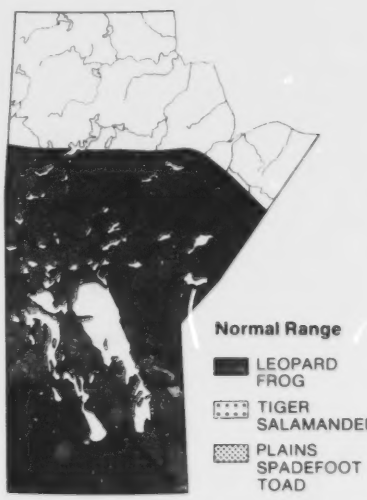
Northern prairie skink: Population trends were difficult to assess but it is believed that Manitoba's only true lizard is less common now than prior to settlement. Habitat within Spruce Woods Provincial Park and the Lauder Sandhills W.M.A has been preserved to help ensure its future.



Northern leopard frog: Populations have increased following a widespread die-off in the 1970's. They were particularly abundant in the wetlands and grasslands of the Interlake.

Tiger salamander: Tiger salamander populations remained stable over the reporting period. The greatest concentrations of salamanders were found in southern Manitoba, west of the Canadian shield.

Plains spadefoot toad: This toad occurred over a limited range on the sandy soils of southwestern Manitoba. It is believed to be less abundant now than prior to settlement, but present populations were expected to be maintained.



Part II

Wildlife Management Programs

Wildlife Administration

Manitoba Natural Resources reaffirmed the goals of the Wildlife Branch in a series of roles and missions statements issued in 1985. These statements complement those presented in the previous Five Year Report, ending March 1982.

Direction for wildlife programs was set within an overview statement of purpose:

> The Wildlife Branch manages the wildlife resource for the important outdoor recreational opportunities that it provides to Manitobans and for the significant economic development and subsistence use benefits which it provides at the community and regional level. Access to wildlife for scientific purposes and the educational benefit of Manitobans, and minimizing damage caused by wildlife are other important responsibilities of the branch.

The branch pursued the following specific goals within this overall statement of purpose;

1. General

- To manage the wildlife resource and its habitat base in a manner which ensures that viable populations are preserved for the benefit of future generations.
- To allocate wildlife resources in a manner which attempts to optimize the long-term social and economic benefits to Manitobans.
- To maintain, protect, and enhance wildlife habitat on Crown and private land to achieve wildlife production requirements that are consistent with projected demands of Manitobans.
- To re-introduce species known to be indigenous to Manitoba and to take measures which will ensure the perpetuation of native wildlife stocks in the province.
- To ensure that the Crown obtains a fair return for the use of its wildlife resource.
- To cooperate with other branches, departments, universities and agencies in the establishment and maintenance of ecological reserves.
- To provide for the use of wildlife for scientific purposes and the educational benefit of Manitobans.
- To promote and assist in the development of humane trapping practices.
- To ensure that wildlife resources are managed on a sustained yield basis.
- To work cooperatively with other branches, departments, outside agencies and wildlife users in planning and managing wildlife programs.
- To allow other resource use opportunities within designated wildlife lands where the provision of same complements and does not conflict with existing or future wildlife plans.

2. Outdoor Recreation

- To provide a diversity of forms and amounts of wildlife use opportunities (including consumptive and non-consumptive uses) for the recreational benefit and enjoyment of Manitobans and their guests.
- To ensure that resident recreational use of wildlife has priority over tourist use.

3. Economic Development
- To provide security of tenure which enables users to earn a reasonable return on their investment and time, provided that departmental terms, conditions and performance criteria are met.
- To provide for and foster commercial use of the wildlife resource within the constraints of a defined allocation policy, the capacity of the resource to withstand such use, and public acceptability.
- To promote the rational use of wildlife in northern Manitoba by assisting native northerners in identifying and developing consumptive and non-consumptive wildlife opportunities.
- To foster and promote the increased use of the wild fur resource and to promote optimum fur harvests and returns to trappers.

4. Subsistence
- To provide for the needs of subsistence users on a priority basis in the management and allocation of wildlife stocks.

5. Public Safety and Protection of Property
- To assist in alleviating wildlife damage to people and property.
- To promote hunting practices that do not endanger life or property.

In the pursuit of these goals, the Wildlife Branch has deployed a staff complement of 72.41 Staff Years (SY) with a budget of $2.5 million for salaries and $1.5 million for operating costs in the 1986-87 fiscal year. Revenues and expenditures for the five-year period from 1982-83 to 1986-87 are as follows:

YEAR	REVENUES ($000)	EXPENDITURES
1982-83	$ 1,981.7	$ 2,041.4
1983-84	2,178.9	1,396.9
1984-85	2,176.5	1,457.5
1985-86	2,186.6	1,505.5
1986-87	2,448.1	1,462.5
5 Year Totals	$10,971.8	$ 7,863.9

Total revenue over the past five years has grown by approximately 24%, while expenditures have decreased by approximately 28%.

Staff were organized into five functional sections; Administration (6 SY), Commercial Wildlife Management (18 SY), Habitat Management (12 SY), Biological Services (12 SY) and Operational Management (24 SY). The latter section included positions located in the Northwest Region, Northeast Region, Western Region, Southwest Region, East/Southeast Region and Interlake Region.

Wildlife Branch sections were each guided by objectives that identified functions and areas of responsibility.

Administration

To ensure clear program definition, budget management, personnel management, interagency liaison, procedure adherence, and executive/public service.

Commercial Wildlife Management

To promote and facilitate development of wildlife with emphasis on community-based initiatives and local income while preventing damage to property.

Habitat Management

To maintain and enhance wildlife habitat on Crown and private land through initiatives for government, and those shared with private organizations.

Biological Services

To obtain and improve biological information and direct non-game and endangered wildlife species programs.

Operational Management

To ensure abundance and diversity of hunting and non-hunting use programs for wildlife and acquaint Manitobans with wildlife values, on a regional and provincial scale.

Wildlife Law Enforcement

The present Wildlife Act was proclaimed on August 29, 1980. Enforcement strategy over the past five years has, in part, been affected by changes introduced in this legislation. These changes included the removal of provisions specifically affecting the hunting of wild animals for food by Treaty Indians, designation of a number of additional species as wild animals under the Act and increased penalties to improve compliance rates. Permission to hunt on private land was made mandatory, thus removing the onus from the landowner who previously had to take civil action against trespassing hunters.

Some of the major initiatives that have occurred include development and implementation of a program incorporating a newly designed computerized records system, increased use of aircraft in conjunction with ground units for surveillance, increased use of forensic laboratories and increased liaison with other enforcement agencies. Emphasis on staff training, particularly in resource law enforcement techniques and improved communications between officers, local user groups, the media and the public at large also occurred.

Staffing was re-scheduled to cover peak periods such as the opening days of hunting seasons and long weekends, and a Turn-In-Poachers (T.I.P.) hotline was initiated. A joint research project with the Canadian Wildlife Service to determine the extent of illegal commerce in fish and wildlife species and an experimental Enforcement Development and Evaluation Section were also implemented.

The three broad categories of wildlife resource users with whom Natural Resources Officers normally dealt were licenced hunters, Treaty Indians hunting under Treaty rights and commercial users of wildlife such as trappers, taxidermists, fur dealers, fur ranchers and game farm operators. During 1985-86, officers made field contact with about 20% of the province's 62,600 resident licenced hunters. Although less information is available, it is believed that a similar percentage of Treaty Indians were contacted during their hunting activities. Compliance checks indicated that approximately 95% of all licenced hunters obeyed the law.

In 1986-87 Natural Resource Officers spent 17% of their time or 5,964 staff-days on wildlife law enforcement activities. This resulted in 615 prosecutions, 276 warnings and responses to 1,580 occurrences reported by the public and cooperating agencies. The five most common offences based on prosecutions during the 1986-87 fiscal year were: loaded firearm in vehicle (100), nighthunting (104), hunting on private land without permission (53), possession of illegally taken wildlife (45) and hunting from a vehicle (37).

The number of nightlighting offences generally decreased after 1983 due largely to inclement weather that restricted access. Apprehensions for hunting on private land without permission have increased since 1980 when the department rather than the landowner (as was the case under the previous Act) began to initiate offence proceedings.

It is anticipated that the most significant enforcement problems over the next five years will continue to be night hunting, the illegal sale of wild meat and illegal hunting on private land.

To adequately cope with these problems, ongoing staffing, funding and technique adjustments will be necessary.

COMPARISON OF HUNTING PROSECUTIONS IN MANITOBA FROM 1977-78 to 1986-87

Fiscal Year	Hunting Prosecutions
1977-78	698
1978-79	804
1979-80	782
1980-81	438
1981-82	955
1982-83	557
1983-84	634
1984-85	603
1985-86	769
1986-87	615

Recreational Hunting

The recreational hunting program is designed to provide Manitobans with an opportunity to harvest wildlife in a biologically sound and socially acceptable manner. This was achieved by providing hunting seasons which regulated season dates, bag limits and hunting methods.

Hunting seasons were provided for upland game birds, waterfowl, deer, elk, moose, wolf, woodland caribou, and black bear. In addition to regular firearm seasons, opportunities were available to hunt some species in special muzzle-loading rifle and bowhunting seasons. Non-residents also participated in Manitoba's upland game bird, waterfowl, deer, moose, bear and wolf seasons.

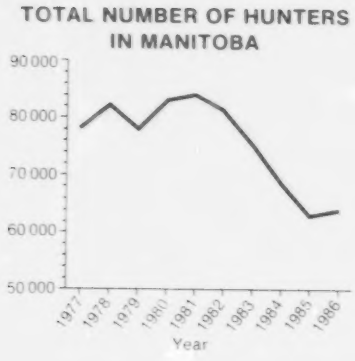
Approximately 63,000 Manitobans participated annually in recreational hunting. Big game seasons annually provided over 240,000 days of recreation and hunters harvested over 22,000 big game animals.

During the 1970's and early 1980's, hunting popularity grew by approximately 2% per year. In the last five years, however, this trend has reversed. The average number of hunters declined by 14% from the previous five year average. The greatest decrease in hunter numbers has occurred among game bird hunters,

SUMMARY OF 1985-86 RECREATIONAL HUNTING ACTIVITY[1]

	Hunters	No. of Days Recreation	No. of Animals Harvested
Game Bird	35,257	Unknown	Unknown
Wild Turkey	77	150	24
Deer	38,743	158,008	19,963
Moose	7,011	40,119	1,417
Elk	2,798	17,071	318
Woodland Caribou	188	799	50
Black Bear	3,514	23,000	850
Wolf	25	Unknown	(<50)
TOTAL	87,613[2]	239,147	22,622

[1] Excluding migratory game birds.
[2] Many of the 63,000 Manitobans who participated in recreational hunting hunted more than one species, therefore total licences sold was 87,613.



but in the last two years there were fewer deer and bear hunters as well.

The reasons for the decline in hunting activity are difficult to quantify, but several factors may have contributed. The increasing costs of hunting, as well as declining game populations, restrictive regulations, and the increasing age of Manitobans have been suggested.

The most significant changes made during the past five years included elimination of white clothing for big game hunters, restrictions on when and where all terrain vehicles could be used, regulations on what, where and how much bear bait could be used, increased hunting party size for deer hunters, prohibition of the discharge of rifles from roads in municipalities and local government districts, and introduction of 300 meter road refuges in some areas. In 1984, at a series of meetings known as "Dialogue on Wildlife", the public advised the department on how it wished to see wildlife managed. Many of the regulation changes were a direct result of those meetings.

Non-resident Big Game Hunting

Non-resident big game hunting was promoted in Manitoba to bring economic return to areas where game populations were not extensively utilized by Manitoba residents.

Non-resident moose hunting, for example, was restricted to remote areas of the province. By regulation, lodges and outfitters provided a minimum four-day package including lodging, meals, boats, motors, gas, canoes, vehicular transportation, guides, licences and care of meat. The harvest was restricted to bulls only with success varying between 25% and 45%.

Non-resident deer hunters accounted for a small proportion of deer licence sales and harvest. Hunters from outside Canada were restricted to remote areas and were required to hunt with a guide. In recent years some of these hunters have come to Manitoba specifically in search of a "record book" trophy deer. The comparatively low hunting pressure in the more inaccessible parts of Manitoba's deer range results in the survival of deer long enough to produce trophy-sized antlers. This has provided an opportunity for local guides and outfitters to offer a trophy-class hunt to non-resident hunters.

Non-resident bear hunters increased in number over the past five years. Non-resident bear hunters spent an average of $1200.00 each for a total annual expenditure of between $400,000 and $625,000. Approximately 55% of this amount was spent on the services pro-

EXPENSES PAID BY NON-RESIDENT MOOSE HUNTERS (excluding licences)

Year	No. of Hunters	Average Expenditure per hunter	$ Generated
1982	220	$1,440	$316,800
1983	101	$1,872	$189,072
1984	97	$1,950	$189,150
1985	42	$2,100	$ 88,200
1986	63	$2,100	$132,300

vided by lodges, outfitters or guides, 10% went for licence fees and 35% was spent on additional food, lodging and other expenses such as taxidermy.

Non-resident timber wolf hunting was introduced in 1986. After only one year, it is too early to assess whether the season will bring measurable economic return to the province.

Hunter and Firearm Safety Program

In cooperation with the Regional Services Branch, a safe hunting review was undertaken in 1982. Opinions of Manitobans were solicited and past firearm accidents were analyzed.

The review revealed that the Hunter and Firearm Safety Program was successful and should be continued. It was recommended that graduation from a Hunter and Firearm Safety Training Program or previous hunting experience be required prior to hunting for small game (an amendment to The Wildlife Act is required). It was also suggested that Indian leaders be informed of high accident rates involving Treaty Indians and that Treaty Indians be encouraged to take the safety training program. Since 1981, 41 native Hunter and Firearm Safety Instructors have been trained and are now offering courses in native communities.

Also evolving from the review were restrictions on the discharge of rifles from roads and changes in big game hunter dress requirements. The review also recommended that it be illegal to transport a firearm in a vehicle unless it is encased or contained in the trunk or other inaccessible area of the vehicle. This recommendation has not been implemented pending further review.

Wild Fur Management

The Wild Fur Program continued throughout the reporting period under a cost-shared agreement between Canada and Manitoba. It provided responsive and efficient management of the wild fur resource to optimize fur harvests and extend greater resource management services for the benefit of trappers.

The program's primary application was in Registered Trapline (R.T.L.) and Special Trapping Areas (S.T.A.) which included some 520,000 square km. Approximately 3,000 trappers were involved, including 1,600 Treaty Indians. Services were also extended to the 132,600 square km. of Open Trapping Area, where there were 12,000 licenced trappers, including 500 Treaty Indians.

The average annual value of wild fur harvested during the past five years was $4.6 million, down 28% from the previous five year average. The average annual income of R.T.L. trappers, who produce about 53% of the provincial fur harvest, decreased from $1850.00 to $900.00. This was attributed to the dramatic decline in the number of Lynx harvested. Treaty Indian trappers produced $1.7 million annually or 35% of the total harvest. Declines in provincial harvest and trapper income were consistent with trends in other jurisdictions and attributed to the 20% to 30% reduction in pelt values since 1980.

Increased effort was directed towards Trapline Officer and Educational Services. Development and training of native Trapline Officers continued, as fourteen participants took part in a month-long Fur Conservation Course offered by the Alberta Vocational Center at Lac la Biche. All officers became nationally qualified trapper education instructors and will play an ever increasing role in future education programs. This training has made it possible to increase the number of fur schools from 10 to 25 per year.

Trapping season setting was modified in 1983 through the establishment of a seasons committee. Representatives from the Manitoba Registered Trappers Association (MRTA), Manitoba Natural Resources and fur buyers met annually to review all suggestions and provide recommendations for the Minister's consideration. This approach was unique to Manitoba and has allowed interested parties to present their concerns.

Significant progress was made toward the development of a new wild fur policy and improved administration system. Between 1982 and 1985, the results of a province-wide consultation process were assembled into a draft policy. The policy should provide Manitoba trappers with a comprehensive administrative process for major fur management activities.

Pressure from anti-trapping groups continued, and its effects were reflected in European fur markets. In an effort to maintain the wild fur industry, Manitoba played a leading role in establishment of the Fur Institute of Canada. Incorporated in 1983, this non-profit organization promoted the use of humane traps and educated the public about the importance of trapping, both socially and economically. The province contributed approximately $14,000 annually to the Fur Institute, and branch staff were active on the Institute's Board of Directors and special committees.

With the creation of the Fur Institute of

Canada, Manitoba's activity in the humane trapping field decreased slightly in recent years. The Fur Institute's humane trap research center in Vegreville, Alberta now takes the lead role in the biological and technical evaluation of new trapping devices. Once approved, new humane traps are distributed for field testing. Manitoba maintained an active role in this area because of the field research facilities at Tramping and Wallace lakes.

Public Education

To increase public awareness about the importance of the wild fur industry, the Fur Unit in cooperation with the Manitoba Registered Trappers Association (MRTA), launched a successful initiative in public education. For the past three years, members of MRTA provided presentations to approximately 6,000 students in 50 schools and conducted a series of lectures in the Whiteshell Provincial Park amphitheaters, reaching 20,000 visitors annually. These programs were a success to the extent that the Fur Institute of Canada is adopting the Manitoba school program for national implementation.

Compensation Programs

The Fur Unit continued to be active in the Manitoba Hydro Trapper Compensation Program. Staff provided production records upon which compensation payments were based and continued to advise the Northern Flood Agreement's Wildlife Advisory and Planning Board on fur management issues. Trappers from York Landing were assisted by Fur Unit and Northern Development Agreement staff in re-establishing their trapping grounds at York Factory. All of the trappers involved were affected by hydro-electric projects and wanted to return to their former area to harvest the available wild fur resource.

DISTRIBUTION OF TRAPPER INCOME BY SPECIES*
(1981-82 to 1985-86 INCLUSIVE)

Species	Total Income	% of Provincial Fur Harvest
Beaver	$3.9 Million	18%
Fisher	3.3 Million	14%
Coyote	2.9 Million	12%
Muskrat	2.6 Million	11%
Lynx	2.5 Million	11%
Red Fox	2.4 Million	10%
Mink	2.4 Million	10%
Marten	1.3 Million	5%
Raccoon	.5 Million	2%
Otter	.4 Million	2%
**Other	1.3 Million	5%

* Based on Fur Year September 1-August 31.

** Badger, Bear, Ermine, Blue Fox, Cross Fox, Silver Fox, White Fox, Squirrel, Timber Wolf, Wolverine

Habitat Inventory and Monitoring

The monitoring of wildlife habitat throughout Manitoba was an ongoing function within the Wildlife Branch. Habitat inventories became more important in the development of mitigative programs and land use allocations. One such inventory, a moose population survey undertaken in 1982 in the 152,000 km^2 Northern Flood Agreement Resource Area, facilitated the preparation of 49 habitat maps essential to the design of a valid population survey. State of the art remote sensing techniques were extensively employed to produce the information inexpensively and expediently.

The Wildlife Branch monitored 17 four-township sample blocks across southern Manitoba to establish trends in the loss of tree and shrub cover on white-tailed deer range. Tree and shrub cover were quantified using 1981 Landsat satellite data. Changes will be determined on a four or five year basis, depending upon the availability of adequate imagery. To date, 15 of the 1,981 sample blocks have been inventoried and eight have been updated using 1985 or 1986 data. The mean annual loss in tree and shrub cover over all sample sites was 2.95% and ranged from 0% in the Hummerstrom area to 7.25% in the McAuley area. In other words, on average all tree cover could disappear in southern Manitoba in just over 30 years, providing the rate of change remains constant. Some areas such as McAuley could be completely cleared in less than 15 years.

Satellite imagery data also were used in two pilot projects to assess their potential for mapping habitat. The first study in the Minnedosa area was completed in 1985 and assessed the eighty metre resolution multi-spectral Landsat scanner data. The results were inconclusive but indicated there was limited potential for mapping the necessary cover types on a regional basis. The second study was completed in the spring of 1987 for the Shoal Lake area, and involved the assessment of the thirty metre resolution Landsat thematic mapper data. These results indicated that water and related upland cover types could be accurately mapped to provide a detailed inventory. This technique has potential in future mapping inventories of waterfowl habitat.

Several smaller mapping projects were completed using Landsat data including a general land cover map of the York Factory area, moose habitat maps of the area peripheral to the Limestone hydro electric project, and a general habitat map of a proposed muskox relocation project south of Churchill.

Wildlife Land Management

Wildlife Management Areas

Wildlife management areas (W.M.A.'s) are tracts of Crown land designated for the protection and management of wildlife and their habitats. Since 1982, a total of 7,668 hectares were added to 13 existing W.M.A.'s, 107,351 hectares were designated in 15 new W.M.A.'s and 11,980 hectares were deleted from 13 W.M.A.'s. At the end of the reporting period there were some 3.0 million hectares of land designated in 62 W.M.A.'s throughout Manitoba.

Development in W.M.A.'s in the past five years continued to facilitate and improve conditions for wildlife and public use. Trail mowing in Brandon Hills W.M.A., brushing designated routes in Narcisse W.M.A., road repair, grading and gravelling in the Pembina Valley, Mantagao Lake and Souris River Bend W.M.A.'s and access development in the Saskeram W.M.A. were all undertaken in the 1982-1987 period. Approximately 100 miles of boundaries were cleared and 350 feature signs were placed at 59 W.M.A.'s. In addition, 800 small boundary signs were erected and a further 500 were replaced. Interpretive facilities were developed at Narcisse W.M.A. to promote public use of the internationally famous red-sided garter snake hibernacula. The Oak Hammock Marsh W.M.A. development included a new information centre to enhance the summer extension program.

Many upland habitat development and maintenance projects aimed at increasing the carrying capacity for wildlife were undertaken in the past five years. These included:

- development and maintenance of 52 one-hectare forage plots in Alonsa W.M.A.;
- planting of 55,000 trees in shelterbelts on 10 W.M.A.'s in southwestern Manitoba;
- seeding of 90 hectares of dense nesting cover at Oak Hammock Marsh W.M.A.;
- clearing 60 hectares of mature forest in the Interlake Region to produce valuable regenerative growth;
- controlled burning of 16 hectares in Tom Lamb W.M.A. to increase desirable vegetation, and;
- erecting a windmill at a pothole in Lauder Sandhills W.M.A. to provide wildlife with a reliable water supply.

The St. Malo W.M.A. resulted from the cooperative efforts of local interests and the province. A local advisory committee and the Wildlife Branch undertook several improvements, including habitat manipulation to create a greater diversity of habitat, and construction of watering sites for wildlife. In 1986 approximately three hectares were seeded to forage for deer. Fuelwood cutting for local residents was permitted on sites selected by the Advisory Committee. The W.M.A. was selected as a release site for white-tailed deer relocated from the City of Winnipeg in 1985-86 and 1986-87.

Until 1985, municipalities considered W.M.A.'s as a liability because of their tax exempt status under The Crown Lands Act. Local governments were obliged in some areas, however, to provide varying levels of service to these areas including road maintenance and fire suppression.

In 1985, the province of Manitoba amended the Municipal Act and began paying grants-in-lieu of taxes to local governments for W.M.A.'s. This resulted in benefits to local governments

of approximately $200,000 and enhanced local appreciation and support for the W.M.A. program.

Land Exchanges

Land exchanges were an ongoing aspect of the W.M.A. program. These exchanges were aimed at optimizing the maintenance and enhancement of wildlife lands by removing arable cropland from W.M.A. status in return for lands with high wildlife values. They were also intended to rationalize boundaries and satisfy the demands of local government districts while preserving valuable wildlife habitat.

Land exchanges in southern Manitoba also resulted in the inclusion of 468 hectares in three W.M.A.s and return of 185 hectares of productive agriculture land to private ownership.

In 1964, 10 local government districts (L.G.D.s) delegated administrative authority for their lands to the Province. A total of 303 parcels of L.G.D. land (21,088 hectares) were subsequently incorporated into 13 W.M.A.'s in four of the L.G.D.'s.

In 1983, L.G.D. requests to regain control of some of these lands resulted in the exchange of 183 parcels (11,852 hectares) within 13 W.M.A.'s. An additional 16 parcels (1,036 hectares) were exchanged in two W.M.A.'s established in 1984.

Refuges

Refuges are areas designated for the protection of selected wildlife species. To date, 27 wildlife refuges, 18 game bird refuges, one goose refuge, one Canada goose refuge and one furbearing animal refuge have been established in Manitoba. In the past five years, 19 new refuges were established.

A new approach was incorporated into three of these recent additions. The Duck Mountain, Swan-Pelican and Chief George Barker Wildlife Refuges are narrow corridors that prohibit hunting within 300 meters of roads. These refuges were designed to prevent dangerous hunting along travelled roads and eliminate opportunistic big game harvesting. In addition, 16 "wildlife oasis" sites southwest of Winnipeg totalling 43 hectares were designated as wildlife refuges. The objective of the Wildlife Oasis Program was to protect and enhance small remnants of wildlife habitat in the Red River Valley. Habitat improvement efforts on these areas in recent years was limited primarily to tree planting. Additional works included site clean up, posting, signing of the refuges and weed control. Currently, the department is consulting with local municipal governments and game and fish associations to develop management strategies for these lands.

Other Crown Lands

Upland habitat development projects also were undertaken in provincial parks, forest reserves and unencumbered Crown land. Many of these areas contain valuable wildlife habitat and support significant numbers of wildlife.

SUMMARY OF L.G.D. LAND DELETED FROM EXISTING W.M.A.'S

Local Government District	W.M.A.	Lands Deleted
Alonsa	Alonsa*	842.4 hectares
Armstrong	Clematis	1425.5 hectares
	Inwood	453.6 hectares
	Narcisse	2073.6 hectares
	Rembrandt	129.6 hectares
	Sandridge	648 hectares
	Sharpewood	453.6 hectares
Sub-Total		5183.9
Fisher	Broad Valley	324 hectares
Grahamdale	Hilbre	2268 hectares
	Little Birch	907.2 hectares
Sub-Total		3175.2
TOTAL		9525.5 hectares

* 842.4 hectares were added to this W.M.A. in exchange for lands deleted.

Upland Habitat Development and Maintenance

Deer Habitat Program

The deer habitat program was introduced in 1977 as a 'user pay' concept through which $1.50 of each deer licence sold was ear-marked for deer habitat.

Over the past five years, the program focused on improving white-tailed deer habitat through a variety of projects. These included vegetation modification on 60 hectares of mature aspen forest in the Duck Mountain Provincial Forest, development of over 160 hectares of legume forage plots on various wildlife management areas, and construction of seven watering sites at Birds Hill Provincial Park, Lauder Sandhills Wildlife Management Area and Mars Sand Hills areas.

A supplemental feeding component was added to the deer habitat program during the winter of 1982-83. Approximately $37,300 was spent supplying 60 feeding sites throughout southern Manitoba with 220 tonnes of pelletized ration and 370 round hay bales. In the winter of 1983-84, 280 tonnes of pelletized ration and 408 round bales (a total cost of $37,500) were utilized at 62 feeding stations.

In 1984-85 severe winter conditions threatened the survival of an estimated 4,000 to 6,000 deer and several hundred elk in western Manitoba. An extensive emergency feeding effort, involving some fifty departmental staff and more than 800 volunteers was undertaken. Program expenditures totalled $450,000, of which $200,000 was provided as emergency funding. Donations of money and feed equaling $170,000 were received from private and corporate donors. An estimated 885 tonnes of pelletized ration, hay, grain and sunflowers were distributed to nearly 600 feeding sites at 15 locations.

In 1985-86 the program focused on acquisition of important deer habitat. To date, 256 hectares of deer range have been purchased in the Portage Sandhills area and 128 hectares of prime habitat were obtained in southwest Manitoba.

The Manitoba Habitat Heritage Program

The Manitoba Habitat Heritage Program was introduced in 1984 to combat the loss and deterioration of fish and wildlife habitat in Manitoba. The purpose of the program was to promote public awareness of habitat trends and to encourage support and participation in various projects to conserve, restore and enhance fish and wildlife habitat.

For the first two years the program was administered by Manitoba Natural Resources, but with the proclamation of The Manitoba Habitat Heritage Act in 1986, this function was transferred to the newly established Habitat Heritage Corporation. Under its terms of reference, the corporation may act alone or in cooperation with other organizations to purchase or lease wildlife habitat and to undertake projects designed to restore or enhance wildlife habitat and populations. Wildlife Branch staff provide advice and technical support to the Habitat Heritage Corporation and implement projects on behalf of the Corporation.

Since the inception of the program three years ago, $375,000 was spent on various projects. These included the acquisition of eight quarter sections of prime wildlife habitat, the signing of five-year Habitat Protection

Agreements (leases) with landowners on 491 hectares of critical wildlife habitat and the implementation of numerous habitat enhancement projects. Included are the establishment of forage food plots in four wildlife management areas, Duck Mountain, Sandilands Provincial Forest and Hecla Provincial Park, as well as the construction of dams and nesting islands to provide wetland wildlife habitat in two wildlife management areas and a wildlife refuge. In addition, four projects involving the construction and placement of nesting structures for great gray owls, ferruginous hawks, burrowing owls, and wood ducks were undertaken.

In a cost shared agreement involving Wildlife Habitat Canada, Ducks Unlimited (Canada), the Manitoba Wildlife Federation, the Manitoba Naturalists Society and the province (using Habitat Heritage funding), a 64 hectare parcel of wetland and upland habitat was purchased in the Killarney area.

The program will continue to be an important vehicle to encourage wildlife production on private land which presently accounts for almost two-thirds of Manitoba's deer and duck populations.

Wetland Habitat Management

The wetland habitat management program was aimed at managing Manitoba wetlands and conserving its wildlife resources. This was accomplished by work with Ducks Unlimited (Canada), Wildlife Habitat Canada, the Manitoba Wildlife Federation, the Manitoba Naturalists Society, the Canadian Wildlife Service and other interested agencies. During the last five years most efforts were directed at several large marsh projects. However, initiation of the pilot Habitat Enhancement Land Use Program (HELP) resulted in a shift in emphasis towards maintaining and protecting privately owned wetlands which are valuable as nesting cover for mallard and pintail populations.

Heritage Marsh Program

On April 19, 1985, a ten-year Heritage Marsh Agreement was signed to protect and manage significant areas of wetland habitat in Manitoba. This agreement involved the province, the Manitoba Naturalists Society, the Manitoba Wildlife Federation and Ducks Unlimited (Canada) in protecting and managing these wetlands for their environmental, economic, recreational and educational values. In the spring of 1987, Wildlife Habitat Canada was added as a signatory.

As a part of the agreement, five marshes under intensive management were designated 'Heritage Marshes'. These were the Summerberry and Saskeram Wildlife Management Area marshes near The Pas, Oak Hammock Marsh and Grants Lake Wildlife Management Areas near Winnipeg, and Proven Lake Wildlife Management Area near Erickson. In addition, 10 candidate marshes were proposed for consideration as Heritage Marshes.

The Heritage Marsh program provided a planning and consultation process where development proposals were thoroughly reviewed. Crown Land Use Classification Plans and Management Plans were reviewed by local planning authorities and the Interdepartmental Planning Board and approved by the Provincial Land Use Committee of Cabinet. This process assured a full review of each project proposal.

A major feature of the Heritage Marsh Agreement was a provision for waterfowl damage prevention in any marsh where cooperative development is planned. Ducks Unlimited may construct waterfowl feeding sites or, in cooperation with Manitoba Wildlife Federation, purchase or lease waterfowl lure crops where required.

Delta Marsh

The Delta Marsh located at the south end of Lake Manitoba is one of the best known wetlands in Canada and, historically, was a major waterfowl and muskrat production area. Problems with water levels, subsequent duck and muskrat production and agricultural encroachment in the 1950's and 1960's contributed to greatly reduced wildlife production in the marsh.

Recent efforts have focused on rejuvenating this once productive marshland. In 1982 Ducks Unlimited presented a development proposal for the area but no action was taken due to local landowner concerns.

In 1985 two Ad Hoc committees consisting primarily of local landowners were struck to

examine further possibilities of developing the School Bay and Lake Francis Units of the Delta Marsh area. If reasonable management plans can be developed by these committees, engineering and technical studies will be completed to renew portions of this valuable marsh complex.

The Pas Marshes

The Pas Marshes, notably the 95,000 hectare Saskeram Wildlife Management Area west of The Pas and 14,000 hectare Summerberry Marsh complex east of The Pas, continued to be managed by the province and Ducks Unlimited to provide habitat for waterfowl, furbearers, moose and other wildlife.

Eighteen marshes encompassing 97,000 hectares in the Carrot River Triangle portion of the Saskeram Wildlife Management Area are currently being developed and managed under a long term agreement signed in 1983 between the province and Ducks Unlimited. As well, an experimental waterfowl bait station designed to prevent crop depredation by ducks in the Carrot River Valley was successfully operated in 1986 along the edge of Saskeram Lake. A local Saskeram Advisory Committee, comprised of representatives from The Pas Indian Band, The Pas Wildlife Association and Ducks Unlimited, continued to provide the Minister with advice on the management of the area.

Thirty-six marshes encompassing 11,000 hectares in the Summerberry Marsh complex were improved and managed by Ducks Unlimited to benefit waterfowl and furbearers between 1982 and 1986. The Summerberry Advisory Committee, with representatives from the province, Ducks Unlimited, The Pas Trappers' Association, and The Pas Wildlife Association, continued to provide management advice to the province and Ducks Unlimited.

A $21.0 million Ducks Unlimited proposal to reduce flooding and improve wildlife habitat in the 200,000 hectare Tom Lamb Wildlife Management Area (including part of the Summerberry complex) is currently under review by government. This major proposal would require financial input from the province and other habitat agencies and, if approved, could also provide significant benefits to other wildlife.

Oak Hammock Marsh Wildlife Management Area Development

Since its designation as a wildlife management area in 1973, Oak Hammock Marsh has provided breeding and staging habitat for waterfowl and shorebirds. This in turn has provided recreational opportunities for Manitobans. To augment these benefits, a $1.9 million cost-shared agreement between Ducks Unlimited (Canada) and Manitoba was signed in 1984. The primary purpose of this agreement was to provide improved water level regulation in the marsh.

Duck production at Oak Hammock Marsh ranged between 5,000 and 10,000 birds annually. Concentrations of fall staging geese and ducks varied between 100,000 and 300,000 annually during the 1982—1986 period. Muskrat harvest from the marsh reached as high as 2,000 animals per year.

Netley-Libau Marshes

In 1979, the Wildlife Branch initiated a comprehensive development and management plan for the Netley-Libau Marshes. Several other resource disciplines including agriculture, fisheries, historic resources, hydrology and parks also conducted independent investigations based on a preliminary engineering and management concept. The engineering concept involved development of several management units within the marsh complex. Results of the investigations revealed that fluctuating water levels were the most significant factor limiting waterfowl, furbearers, agricultural and recreational resources.

The Netley-Libau Marshes Development and Management Plan was completed in 1986. It identified two water control development schemes and a third scheme, level ditching. All three development schemes would provide habitat and increase wildlife, recreation and agriculture values and user opportunities. However, the two development schemes that require water level control would have a negative impact on fisheries resources. Level ditching would have little effect on fisheries but would provide only limited wildlife benefits. No action has been taken to implement the plan pending a thorough review.

Dennis Lake

In 1982, a Task Force and Local Advisory Committee were organized to investigate and report on water control options for Dennis Lake and nearby wetlands. Annual flooding problems due to a lack of water regulation had resulted in losses to both agriculture and wildlife resources in the area. The advisory team included representatives from local governments, Water Resources and Wildlife Branches of Manitoba Natural Resources, Manitoba Agriculture, Ducks Unlimited, Canadian Wildlife Service, the Dennis Lake Wildlife Association and Dennis Lake Conservation Committee.

The final report, completed in October 1983, provided recommendations for water regulation schemes. The Dennis Lake Project is proceeding through the planning and approval process as a candidate Heritage Marsh.

The Rat River Wetlands Project Development

Potential development of a wetland complex aimed at solving agricultural flooding problems and creating waterfowl habitat was considered by the Rat River Task Force. Current tasks being addressed by the team include the production of a topographic survey and collection of additional soil information to assist in the development of a multi-disciplinary resource plan for the area.

Ducks Unlimited (Canada) Projects

Between 1982 and 1987 Manitoba and Ducks Unlimited developed 42 cooperative wetland habitat projects involving 12,000 hectares of wetland and upland nesting habitats. Expenditures by Ducks Unlimited and their Manitoba complement of 59 staff, equalled approximately $6.0 million annually.

A number of major land use agreements with Ducks Unlimited were negotiated during the five year period. These included the Carrot River Triangle of the Saskeram Wildlife Management Area, which was signed in November, 1983 and involved the expenditure of $3.5 million. The Oak Hammock Marsh Wildlife Management Area water distribution and facility improvement agreement was signed in January, 1985 for a cost shared expenditure of $2.0 million. The Vestfold agreement, signed in June 1986, involved the development of 2,500 hectares of wetland habitat near North Shoal Lake at a cost of $1.5 million.

Wildlife Habitat Canada

Wildlife Habitat Canada is a national non-profit organization chartered in 1984 and dedicated to the conservation, restoration and enhancement of habitat in order to retain the diversity, distribution and abundance of wildlife in Canada. Its involvement in wetland habitat projects in Manitoba included the Habitat Enhancement Land Use Program (HELP), Kissick and the Akudlik Marsh projects.

The HELP program was initiated as a pilot project in 1985. Its objectives were to promote better land use and preserve prairie pothole habitat on private lands in western Manitoba. Funding for proposal development was secured through Wildlife Habitat Canada.

The HELP proposal contained a number of different options offered to local landowners. Cooperators could choose from the several land use options including leasing of potholes with adjoining uplands, soil erosion and salinity control practices, conservation farming incentives, mortgage subsidies and key habitat acquisition.

HELP became fully operational as an eight-year program starting in 1987, with a total budget of $3.0 million. Of this, $1.5 million will come from Wildlife Habitat Canada, and $0.75 million each from Ducks Unlimited and Manitoba Natural Resources. Input also was received from Manitoba Agriculture, Prairie Farm Rehabilitation Administration (PFRA), the Conservation District Authority, Manitoba Wildlife Federation, Canadian Wildlife Service, municipal governments, local farmers, and land use agencies in Wisconsin, Minnesota, North Dakota, Saskatchewan and Alberta. The program is aimed at the Rural Municipality of Shoal Lake in the heart of Manitoba's prairie pothole region. Expansion into surrounding areas is expected by the third year of the program. HELP is projected to impact 2,400 hectares of land per year.

The Kissick Project, located 8 km. west of Cartwright, involved the acquisition of 64 hect-

ares of natural prairie—wetland complex. Its aim was to preserve and enhance the diversity of flora and fauna in an intensively farmed region. The acquisition involved the co-operative efforts of the province, Wildlife Habitat Canada, Manitoba Wildlife Federation and the Manitoba Naturalists Society. Ducks Unlimited has agreed to manage the area for wildlife.

The Akudlik Marsh Project near Churchill was designed to protect and manage the only known nesting grounds for the Ross' Gull in mainland North America. As one of the rarest birds in the world, the Ross' Gull stimulated international interest after the discovery of a nest in 1980. The project was designed to minimize natural and human disturbance threatening this small colony of endangered birds.

The Akudlik Marsh Project involved an agreement between the province, Wildlife Habitat Canada, Ducks Unlimited (Canada), and the Manitoba Habitat Heritage Corporation to share the costs of $58,000 required to develop and manage the marsh and associated interpretive facilities.

North American Waterfowl Management Plan

Since the 1980's, waterfowl populations and the recreational and economic opportunities they supported have declined substantially. This loss was largely due to the gradual loss and degradation of wetland habitat. The large scale alteration of these wetland habitats by increased agricultural activity and urbanization have reduced some important duck species like mallards, pintails and canvasbacks.

In 1978, discussions began between provincial and territorial wildlife agencies and the federal government to develop a waterfowl management plan for Canada. Recognizing that the conservation of waterfowl must be a cooperative planning and coordinated management process, Canadian representatives entered discussions with the United States. A draft North American plan was subsequently developed and released for public comment in December 1985. It was formally signed in May of 1986.

This plan, the North American Waterfowl Management Plan, is intended to provide the overall framework for joint waterfowl management to resolve problems of international concern. The plan's overall objective is to restore mallard, pintail, black duck and total duck populations to levels experienced throughout the 1970's (a continental population of approximately 62 million breeding ducks). Achieving breeding population objectives requires an expenditure of some $1.5 billion over the next 15 years. One billion dollars of the total expenditure would be required for prairie Canada (Alberta, Saskatchewan and Manitoba). Of this, $239.0 million would be solicited from Canadian sources, and $717.0 million from sources in the United States. Much of this funding will be used exclusively for protecting and improving breeding duck habitat on private land through voluntary incentives to landowners. These incentives, developed in cooperation with the agricultural sector, will promote soil, wetland and water conservation practices.

Wildlife Investigations

Biological investigations were an ongoing function of the Wildlife Branch, including provision of technical services and consultation, quality control in Branch programs and evaluation of existing projects. The main areas of focus included population ecology, non-game biology and biological analysis. In addition to budgeted funds, financial support for biological work was provided by related government departments and private agencies. The following organizations were major contributors or cooperators in biological projects:

- U.S. Fish & Wildlife Service (waterfowl, Canada geese, bald eagles)
- World Wildlife Fund Canada (endangered species, toxic chemicals)
- Abitibi-Price (woodland caribou, great gray owl)
- Canadian Wildlife Service (polar bears, waterfowl)
- States of Minnesota, Iowa, Missouri and Arkansas (waterfowl)
- Governments of Ontario and Northwest Territories (great gray owl, polar bear)
- Murphy & Richardson Foundations (endangered species)
- University of Manitoba (non-game, toxic chemicals, wildlife management)
- Department of National Defence (CFB Shilo—elk)

Waterfowl

Long-range assessment of waterfowl populations and harvest levels continued throughout the reporting period. Information gathered from waterfowl banding, bag checks and hunter interviews contributed directly to the evaluation of five-year stabilized hunting regulations in the Mississippi Flyway as well as an assessment of harvest and annual season setting in Manitoba. Since 1982, 9,000 to 17,000 ducks were banded annually at five banding stations.

Biological Services staff actively participated in the mallard reward band program, spring waterfowl counts and nesting surveys in cooperation with Canadian Wildlife Service and U.S. Fish & Wildlife Service. This data base was used in 1985-86 in the planning of the Manitoba portion of the North American Waterfowl Management Plan.

Long-range studies of Canada geese at Cape Churchill and in the Interlake Region continued. At Cape Churchill, productivity of the Eastern Prairie Population was assessed in order to maintain an annual objective of 180,000-200,000 geese for this population. The 1986 fall population was estimated at 182,000. A study of Canada goose mortality by arctic foxes was also initiated at Cape Churchill.

The Giant Canada Goose population has been recovering in central Manitoba. Artificial nests installed at Oak Hammock Marsh and Fort Whyte Nature Centre resulted in successful nesting and brood rearing in high use areas near Winnipeg.

A study of goose hunters at Whitewater Lake was conducted in order to assess the future of non-resident hunting in the area. Hunter use at Oak Hammock Marsh and Grants Lake was also monitored.

Big Game

Annual monitoring and assessment of existing populations of moose, elk and deer con-

tinued. This was accomplished through aerial surveys to determine population estimates and sex-age composition of herds in various game hunting areas. Studies of winter-killed and vehicle-killed deer provided additional indicators of herd vitality and status.

In 1982, a survey technique utilizing computer analysis of Landsat satellite imagery was developed to estimate the moose population in the Northern Flood Agreement area. A general ungulate computer model was developed in order to examine and illustrate management alternatives with native user groups, recreational hunters and the general public.

A three year evaluation of moose-wolf relationships and predator control was conducted in the Saskeram River Delta area and a complete model was also developed for examining polar bear populations in Manitoba.

Other activities contributing directly to improved big game management included the initiation of a black bear harvest study near Riding Mountain National Park and a long-range study on the impact of logging on woodland caribou east of Lake Winnipeg.

The voluntary hunter cooperator program continued throughout the reporting period. Big game jaws, biological samples and, beginning in 1985, reproductive tracts, were collected from successful licenced and subsistence hunters. The samples were examined to provide information on the age structure and reproductive rates of elk, moose and caribou. An incentive program to encourage hunter participation was expanded.

Furbearers

Investigative efforts in support of the wild fur program included the development and implementation of a computerized fur statistics program and evaluation of humane traps and trapping systems. Traps that performed according to accepted criteria were endorsed and made available to trappers. Beginning in 1985, a major effort to determine population parameters of several furbearer species (muskrat, marten and fisher) was begun. Existing biological data from trappers and harvest records were used to establish a lynx quota system in Manitoba. Also, an assessment of muskrat habitat in Netley-Libau and other major marshes was completed.

Non-Game—Endangered Species

Since 1982, a non-game program has developed in Manitoba with emphasis moving from individual co-operative projects on species status to the drafting of species recovery plans (peregrine falcon, burrowing owl, piping plover, wood bison, swift fox) and habitat enhancement. It is anticipated that a formal non-game plan including endangered species as a component, will be developed and implemented during the next five years.

The department conducted research on the status and distribution of the bald eagle, ferruginous hawk, burrowing owl and great gray owl. As part of a continent wide re-introduction program, four to seven captive-raised peregrine falcons were released annually from various sites in Winnipeg. Sightings of peregrine falcons have increased and in 1986 a male released in 1984 returned to the downtown area and attempted to nest with a female released in 1983 in the Montreal area.

A survey of nesting pelicans was carried out between 1984 and 1986 and a Canadian status report was produced. As well, studies were carried out to determine the status of the piping plover and Baird's sparrow. Research by the University of Manitoba on songbirds breeding along the Delta Ridge was supported by the department, as was a committee of the Manitoba Naturalists Society which is working on a comprehensive book on the birds of Manitoba.

Long Point Mammal Monitoring

Small mammal and snowshoe hare populations and changes in their habitats have been measured annually at Long Point for the past 16 years. These data, now in the process of being published, provided insights into cyclical population behavior, interactions between hares and smaller mammals, and relationships between these mammals and the vegetation that supports them. This information has proven valuable in predicting furbearer population levels.

Garter Snakes

The snake hibernacula (winter dens) in the

Interlake have attracted international attention because of the large numbers of snakes which congregate there. Researchers from the University of Manitoba and the University of Texas investigated physiological and behavioral mechanisms involved in mating, reproduction, orientation, and movements to and from dens. Reduced numbers of snakes at some major dens was a matter of considerable concern. Improved monitoring of harvest rates, a review of costs and benefits of commercial use of red-sided garter snakes, and an evaluation of needed improvements to on-site interpretive facilities are aimed at conserving the unique abundance of these animals in Manitoba.

Other Non-Game Activities

With the assistance of several students, a search was made of early newspapers at the Provincial Archives to obtain historical records of wildlife natural history and prairie fires in Manitoba. Several hundred items from the early part of the century were obtained and recorded on file cards.

To meet public demand for the rehabilitation of injured wildlife (chiefly birds), staff helped establish the Manitoba Wildlife Rehabilitation Organization, a private group seeking to establish a facility to serve the province. Contact was made with volunteer workers who were willing to work out of their back yards. Food for raptors was provided to these people along with logistical support.

A symposium on the biology and conservation of owls was organized and hosted by the department in February of 1987. The conference attracted 153 delegates from Europe, 17 American states, and five Canadian provinces. Fifty-five papers were presented and workshops were held. This event attracted international attention from the media.

Toxic Chemicals

First steps in the investigation of toxic chemicals such as mercury and organo-chlorine pesticides in fish-eating birds, hawks and owls were taken. Approximately 600 fresh eggs were collected from nests, brought into the lab and frozen for analysis. Where toxic chemicals are found at levels of concern, further work will be undertaken to determine the origin of the toxins.

The presence of the toxic metal cadmium was detected in moose in 1985 and investigations were undertaken to determine its significance. An intensive effort was undertaken during the 1986 hunting seasons to collect selected tissues for cadmium analysis, the results of which will be available in late 1987.

Problem Wildlife Management

The Wildlife Branch, in cooperation with the Regional Services Branch, continued its commitment to ease the financial burden to agricultural producers from damage caused by wildlife. Those affected by problem wildlife were provided with technical advice from the department and, when a problem went beyond the scope of an individual or when human safety was threatened, staff were available to take appropriate action. The department carried out comprehensive problem wildlife programs where damages had increased as a result of habitat development projects or very restrictive hunting seasons.

Polar Bear Control

To ensure the safety of people and property from polar bears congregating each summer in the Churchill vicinity, new procedures were implemented during the past five year period. Polar bears were removed from the most densely populated area, the town of Churchill, and held in a newly constructed holding facility until they could be relocated. Between 1982 and 1986, 5 to 81 bears were held annually and released when ice formed on Hudson Bay. Despite these efforts, one fatal bear mauling occurred in the town of Churchill in 1983, and a photographer was bitten on the arm at Cape Churchill. Revised policy and procedures, implemented in 1985, added the town dump as a priority bear removal area. This approach was successful in reducing the number of bears that ventured near the townsite. The number of polar bear complaints varied from 50 to over 200 annually during this reporting period.

The department also continued a program of public education to maintain a high level of awareness of the potential danger of polar bears among residents and visitors.

Waterfowl Crop Damage

The province maintained two programs designed to reduce the effects of damage by field-feeding waterfowl — the Waterfowl Crop Damage Prevention Program and the Waterfowl Crop Damage Compensation Program.

The Waterfowl Crop Damage Prevention Program was made available to all Manitoba farmers who suffered crop damage by waterfowl. The department assisted farmers in scaring waterfowl from crops by providing materials for scarecrows and deploying noise-making devices such as propane bangers and cracker shells. In priority program areas, such as the Oak Hammock Marsh, the Pasquia Project Area (The Pas), and Big Grass Marsh, alternate feeding sites including lure crops or bait stations were operated to attract and hold waterfowl.

Two bait stations were initiated during this reporting period in cooperation with Ducks Unlimited. The Lidcliff bait station, constructed by Ducks Unlimited in 1985, was operated by the department until it was terminated in September of 1986 due to a botulism outbreak.

The Saskeram bait station, situated just north of the Pasquia Project Area, also was undertaken jointly by Ducks Unlimited and the department. Operated on a trial basis during the fall of 1986, the site attracted over 10,000 ducks. The site will be upgraded by Ducks Unlimited and operated at its full potential in 1987.

SUMMARY OF CROP DAMAGE PREVENTION COSTS

	1982-83	1983-84	1984-85	1985-86	1986-87
Private Land					
— Lure Crop					
The Pas	$27,000	$31,700	$36,000	$37,500	$30,900
	(84ha.)	(100ha.)	(132ha.)	(120ha.)	(153ha.)
Big Grass	$13,000	$11,300	—	$ 7,500	$ 7,100
	(28 ha.)	(28ha.)		(25ha.)	(25ha.)
Oak Hammock	—	—	—	$65,000	$47,000
				(258ha.)	(210ha.)
Crown Land					
— Lure Crop					
Pleasant Valley	$ 1,200	$ 1,000)	$ 2,500	$ 1,700	—
	(18ha.)	(18ha.)	(12ha.)	(12ha.)	
Oak Hammock	$38,000	$45,000	$34,000	$39,200	$59,200
	(244ha.)	(178ha.)	(244ha.)	(260ha.)	(324ha.)
Delta	$ 6,500	$ 6,000	$13,500	$ 8,200	$ 5,500
	(36ha.)	(56ha.)	(64ha.)	(54ha.)	(78ha.)
Grant's Lake	$10,000	$13,000	$11,000	$ 2,200	$ 8,100
	(45ha.)	(46ha.)	(46ha.)	(46ha.)	(40ha.)
Grain Dump					
The Pas	—	—	—	$12,000	$ 7,600
Equipment Purchase & Program Delivery	$156,000	$82,000	$96,000	$271,700	$287,600
TOTAL	$251,700	$190,000	$193,000	$445,000	$453,000

Program costs were governed largely by weather conditions. In 1982, 1983 and 1984 weather conditions generally were conducive to early harvest and program costs were relatively low. Conversely, in 1985 and 1986, harvest was delayed due to wet conditions resulting in an extended depredation season and program costs amounting to $450,000 each year.

Manitoba and Canada have shared prevention program costs on a 50:50 basis since 1972. In 1983, the department negotiated a new five-year agreement providing for an annual expenditure of $450,000 to be shared equally between Manitoba and Canada.

The Waterfowl Crop Damage Compensation Program continued to provide partial compensation to grain producers for crop losses caused by waterfowl by covering a major portion of the production costs for crops that were damaged despite damage prevention efforts. Canada and Manitoba have shared program costs on a 50:50 basis since the inception of the program in 1972. Manitoba Natural Resources continued to administer the program until April 1, 1983 when the program was transferred to the Department of Agriculture. The program was then operated by the Manitoba Crop Insurance Corporation.

Big Game Damage

The department continued to deliver two programs to reduce the negative impact of big game on the farm economy. One program was intended to assist producers in preventing damage while the second compensated producers for a major portion of the cost of production for damaged crops.

To help prevent damage, technical advice, scaring devices, repellents and intercept feeding techniques were used. Intercept feeding, first used in 1981, was refined over the reporting period. It involved the placing of feeders to attract deer and elk from haystacks. In years when winter conditions were not severe, the program was funded at a minimal level ($8,000) and between 200 and 300 complaints of damage were handled per year. Severe conditions prevailed in 1984-85 and some 550 complaints were handled. In this year, additional funds amounting to $55,000 were allotted for intercept feeding. In addition, in 1982-83, 1983-84 and 1984-85 the department provided materials for the construction of deer and elk-proof fences to two producers each year who had suffered significant levels of deer or elk damage to haystacks. This aspect of the program was discontinued in 1985-86 due to a reduction in funding.

Some 40 grants of $100.00 were paid annually to beekeepers to subsidize the construction of new electric fences. Electric fences have proven to be the most effective means of preventing bear damage to beehives. The department also assisted in controlling problem bears around campgrounds, livestock operations, beehive yards and communities when required.

The Big Game Damage Compensation Program relieved agricultural producers of much of the financial burden from deer, elk and black bear damage by reimbursing them for a major portion of the cost of production for damaged produce. On April 1, 1983, a new regulation was adopted which improved program benefits by increasing the maximum payment per claim from $5,000 to $7,000 and by expanding the list of crops eligible for compensation. In order to qualify for compensation, claimants were required to have taken precautions to minimize damage.

Beaver Control

Dams built by beaver to maintain adequate water levels around their lodges continued to cause property damage by flooding roads, farm fields and buildings. Prior to 1985, field staff handled these problems at their discretion resulting in considerable variation in the level of service being provided. In 1985 a Problem Beaver Control Policy was adopted. Under the policy, agencies such as the Engineering and Construction Branch and the Regional Services Branch of Manitoba Natural Resources, the Department of Highways, municipalities and private companies (e.g. railways) were expected to remove beaver dams from waterways under their jurisdiction. The department provided technical advice and issued permits for the removal of beaver dams as required. Private citizens and agencies were not required to have a permit to remove problem beavers on their own lands or lands under their jurisdiction.

A joint agreement with Parks Canada to finance a special beaver control program around Riding Mountain National Park was negotiated during the last reporting period. The program began in April of 1982 and provided for annual cost shared expenditures of $60,000. Department staff and specially hired trappers responded to more than 200 com-

WATERFOWL CROP DAMAGE COMPENSATION CLAIMS

Year	Number of Claims	Total Program Cost
1982-83	165	$221,525
1983-84	61	75,950
1984-85	66	85,735
1985-86	686	1,174,515
1986-87	505	82,335
Total	1,483	$1,640,060

PROVINCIAL BIG GAME DAMAGE COMPENSATION PROGRAM

Year	Number of Claims	Total Program Cost
1982/83	250	$164,300
1983/84	279	173,860
1984/85	440	260,000
1985/86	195	144,520
1986/87	195	248,628
Total	1,359	$991,308

plaints annually by trapping problem beavers and removing dams that caused flooding. The initial agreement expired in 1984 and a new five year agreement with the same provisions was instituted for the period April 1, 1985 until March 31, 1990.

Wolf, Coyote and Fox Control

The department formulated and adopted a Problem Wolf Control Policy in 1984. By providing concise guidelines on when, where and how the problem wolf control program can be undertaken, the policy ensured that livestock producers do not suffer significant financial hardship due to wolf predation and that human safety is not threatened. The overriding consideration was that wolves should not be unduly harassed or killed. Approximately 50 wolf-related complaints were handled each year.

The policy also provided for wolf removal to facilitate the recovery of other wildlife populations. In a portion of G.H.A. 8, where the moose population had declined substantially, hunting was curtailed and a wolf removal program was initiated in the winter of 1985-86. This program was approved with the stipulation that only the most restrained methods (ie. trapping and shooting by local trappers and department field staff) could be used.

The department also responded to complaints of foxes and coyotes killing poultry and other domestic livestock by removing the problem animals.

Incentive Program

1985 saw the inauguration of a draw with three significant prizes for all hunters cooperating with the department by turning in biological samples requested. A similar draw was held in 1986. Prizes have included firearms, a chain saw, a fishing rod and reel, a lantern, a compound bow and a chair constructed of moose antlers.

Requests for samples went out to licenced hunters as well as subsistence users. It is noteworthy that in 1986 the request to native users was written in Cree as well as in English.

Results to date suggest that there has been a significant increase in the number of samples submitted expressed as a percentage of the harvest and it is speculated that as the program becomes more widely known it will become even more successful.

Wildlife Information and Education

The Wildlife Information and Education Program endeavoured to instill in Manitobans an awareness, understanding and appreciation of the values and attributes of their wildlife heritage. As well, efforts were made to foster public participation in the planning and delivery of wildlife management programs. Such participation has proven to be vital to the wise use and maintenance of the wildlife resource.

National Wildlife Week

Manitoba's National Wildlife Week Program continued to grow as new initiatives were launched. The program's success was largely due to the ten wildlife agencies that made up the provincial working group. Programs organized at a community level were delivered by an ever-expanding number of satellite groups which in 1987 sponsored activities in Portage la Prairie, Brandon, Boissevain, Dauphin and Roblin. Provincial programs centred around public displays and youth contests. Displays involving some 20 wildlife and special interest groups annually reached an estimated 150,000 to 200,000 people in Winnipeg, Brandon, Portage la Prairie and Dauphin. Poster, prose and doodle poster contests attracted thousands of entries from Manitoba school children. Children who participated in provincial or community activities received certificates of appreciation with prizes of cameras, wildlife books and posters going to winning entrants. Teachers and youth group leaders received wildlife fact sheets, activity kits, doodle posters, and colouring sheets in French and English. Corporations that have sponsored National Wildlife Week Programs include Silverwood Dairies, Pacific Western Airlines, W.H. Smith Bookstores, Payless Fishing Tackle, Safeway, Mr. Steak Restaurant and Black's Photo. The province's working group also promoted the week through various media outlets. In 1986, the Canadian Wildlife Federation awarded Manitoba's National Wildlife Week working group the prestigious Doug Clark Memorial Award for its achievements in the field of wildlife conservation.

Project Wild

The Wildlife Branch formally introduced Project Wild to Manitoba's school system in April 1986. Originating in the western United States, the program is sponsored in Canada by the Canadian Wildlife Federation. Project Wild was designed to bring a wildlife and conservation message to educators and their students. An interdisciplinary program, it is aimed at school teachers from kindergarten to grade 12 but can also be used by leaders of youth groups involved in environmental education programs such as 4-H clubs and Girl Guides. Project Wild manuals were distributed to volunteer educators who completed a workshop conducted and coordinated by Wildlife Branch staff. In its first year of operation, branch staff conducted four workshops and ran ten orientation presentations.

Wildlife Management Area Tours

The distinctive character of wildlife management areas continued to appeal to growing numbers of Manitobans and tourists. Oak Hammock Marsh showed the greatest upsurge in activity with visitor numbers increasing from

35,000 in 1982 to 65,000 in 1986. The level of use should increase by 10 to 15 percent annually throughout the 1980's. Seasonally employed naturalists continued to provide tours for school and special interest groups in the spring and fall, and promoted marshlands through shopping mall exhibits during the summer months. Approximately 7,000 people were contacted through mall displays and 4,000 were taken on tours of the marsh.

Oak Hammock Marsh received funds from Destination Manitoba in 1984 to develop an information centre and complementary visitor service facilities. Opened in the fall of 1986, the information centre was staffed from mid-May to late-October. Record numbers of visitors toured the facilities during October of 1986.

Branch staff continued to keep area residents apprised of marsh programs and developments through a newsletter that was published three times a year. Resident interest in area programs remained high with farmers sitting on the Oak Hammock Marsh Advisory Committee. In 1986, residents organized a community picnic and dance in conjunction with branch staff and Ducks Unlimited. Fashioned after picnics held in the area 100 years ago, it is hoped that Oak Hammock Day will become an annual event. Branch staff also hope to establish a corps of volunteers to offer a range of interpretive services within the area.

Department staff continued to take groups of students on tours of the Souris River Bend, Brandon Hills, and Narcisse Wildlife Management Areas. In spring of 1985, a seasonal naturalist was hired to interpret the significance and unique character of the Narcisse snake dens. Approximately 7,000 people visited the internationally acclaimed dens annually to experience the sight of thousands of snakes mating and milling about in their dens. Newly developed visitor facilities within the area included washrooms, picnic tables, drinking water, interpretive signs and trail markers.

Publications

Publications continued to be an important part of the wildlife education program. While some publications were produced to facilitate compliance with wildlife regulations, others promoted a greater awareness and appreciation of the value of wildlife. Increased emphasis was placed on material designed for school teachers. New wildlife publications included "A Guide to Oak Hammock Marsh", "Snakes of Narcisse", "Be Bear Aware" colouring book, "Manitoba's Habitat Heritage Corporation" and "Ribbons of Habitat". Staff also helped Ducks Unlimited, the Canadian Wildlife Service and the Department of Agriculture produce junior and senior sets of wildlife conservation manuals for the 4-H program.

In 1986, in cooperation with Public Information Services, a series of 30-minute T.V. programs about Manitoba's natural resources was produced. Hosted by students in grades 5 and 6, "Video Kids Magazine" was aired on community cable T.V. Programs focused on snakes, owls, wildlife in the city, white-tailed deer and snow. Programs were also produced on Manitoba's bird life and the art of wildlife carving.

A 12-minute film on ways to avoid a confrontation with a polar bear was produced in 1986. This 16mm film was targeted at Churchill youth.

Wildlife Conservation Awards Program

From September 1983 to October 1986, 46 individuals or organizations were recognized under the Wildlife Conservation Awards Program. The program recognized Manitoba residents, non-residents, conservation organizations or corporations who contributed to the well-being of the province's wildlife resource. Recipients were awarded plaques or certificates by the Minister of Natural Resources at an annual awards ceremony.

Provincial Bird Emblem

The great gray owl was selected in September of 1985 as the provincial bird. Information on the distribution and habitat requirements of the great gray owl will assist the public in viewing this bird.

Public Participation

In working toward mutual trust and cooperation with wildlife enthusiasts, staff continued to seek ways to make public participation a

meaningful aspect of program development. Initiatives lending themselves to public input included interaction with advocate wildlife groups, public input into managed hunting programs, hunter check stations, field work in wildlife management areas, nature interpretation projects, design and administration of habitat retention programs and design of educational material.

Displays

Wildlife displays played a large part in highlighting a variety of messages on the wise use of Manitoba's wildlife resources. The value and function of Manitoba's wild fur industry was conveyed each year to some 13,000 people visiting Whittier Park during the seven-day Festival du Voyageur. Sponsored by the Manitoba Registered Trappers Association and the department, the program featured a trapper's cabin outfitted with humane trap sets and raw furs. Trappers were on hand to speak in both French and English on the importance of Manitoba's fur industry. Staff also set up wild fur and wildlife management exhibits at The Pas Trappers Festival, contacting an estimated 4,000 people during the four day event.

Wildlife exhibits were also displayed annually at five to ten functions such as the 1986 Winnipeg Sportmen's Show. At the Sportsmen's Show, staff joined forces with Manitoba Wildlife Federation to organize the First Annual Prairie Canada Decoy Carving Competition. A bird fair exhibit involving five wildlife groups promoting aspects of bird life in Manitoba also was organized.

Cooperative Wildlife Management

In the past five years there has been increasing emphasis in the areas of community and citizen involvement in wildlife management. Management boards, agreements and community committees have become important components in the overall picture.

Community Wildlife Management Project

This project, initiated in 1976, continued to operate in northern Manitoba as part of the Resource Development Program under the Canada-Manitoba Northern Development Agreement. It operated under the precept that successful wildlife management required the involvement and support of local people. The project consisted of several major components.

Efforts to manage barren-ground caribou have improved since the signing of the "Beverly-Kaminuriak Barren-ground Caribou Management Agreement" in June of 1982 by Manitoba, Saskatchewan, the Northwest Territories and the Government of Canada. The agreement provided for the establishment of the Beverly and Kaminuriak Caribou Management Board, allowing representatives of local native communities, provincial and territorial governments, and the Canadian government cooperatively to manage the herds to ensure their continued survival. The Board recently completed a long-term management plan for the caribou herds which underwent public review.

A moose and woodland caribou management program for the Limestone area was initiated in 1985-86, with Manitoba Natural Resources administering and staffing the program and Manitoba Hydro providing the funding. The program was intended to ensure the long term viability of moose and woodland caribou resources during the construction phase (1985 to 1992) of the Limestone generating station.

Aerial moose and woodland caribou surveys were conducted in 1985-86 in the Nelson River area, and moose surveys were conducted in 1986-87 in the Limestone development area. The department also monitored the distribution and success of hunters, both Treaty and recreational. Information obtained from these studies was provided to local residents through community meetings.

Because the overall impact of the Limestone development on the moose and woodland caribou resources in the area is difficult to predict, fixed management programs were not developed for the entire length of the project. Instead, a program was developed requiring annual review by both Manitoba Hydro and Manitoba Natural Resources.

A moose management program was initiated in 1983 in the five resource areas (Cross Lake, Norway House, Nelson House, Split Lake and Southern Indian Lake) defined in the Northern Flood Agreement. The program was administered and staffed by Manitoba Natural Resources but received its funding from Manitoba Northern Affairs. The objective of the moose management program was to develop and implement moose management plans for the five resource areas with the involvement and support of local residents. Population monitoring, community liaison and public education were the main components of the program. Regular community workshops, meetings and presentations outlining the results of the

moose surveys were conducted, and a newsletter entitled "Moose Management News" was distributed to all households in the Northern Flood Agreement communities. The five resource areas involved represented an area in excess of 150,000 square kilometers or approximately 20% of Manitoba.

Cooperation and interest in moose management has increased steadily since the program was initiated, and the benefits of implementing management strategies are better understood. Management plans supported by the communities are targeted for completion in 1987-88.

The community wildlife management project was also involved in polar bear control and the management of Akudlik Marsh near Churchill.

Other Cooperative Projects

Skownan Moose Management Board

The Skownan Moose Management Board was formed in 1985 under the auspices of a cooperative moose management agreement. At the request of native people, the Board explored new initiatives to curtail hunting in the Waterhen area. Hunting activity by Treaty Indians in this area decreased substantially and the moose population reached a level where it has the potential to expand rapidly if protected.

G.H.A. 8 Moose Management Agreement

In November of 1986, the G.H.A. 8 (The Pas area) Moose Management Agreement was renewed for an additional three years. This agreement involved The Pas Indian Band, Moose Lake Indian Band, Easterville Indian Band, The Pas Area Wildlife Association, Cormorant Community Council, Moose Lake Community Council, and the Manitoba Department of Natural Resources. An important element of the agreement was that all agreed to stop moose hunting in the area for three years. This included hunting by licenced recreational hunters and Treaty Indians.

Chief George Barker Wildlife Refuge

In October of 1986 a wildlife refuge was established in memory of Chief George Barker, a well respected conservationist and former chief of the Hollow Water Band. The refuge was put in place with full support from the band and was designed to prevent dangerous and opportunistic big game hunting along travelled roadways.

West Region Elk Management Board

A new concept established in 1986 was the West Region Elk Management Board. The mandate of this board is to examine all issues regarding elk management in the Duck Mountain area and make recommendations to the department. The board is comprised of department representatives (Wildlife, Parks and Regional Services), and representatives from local organizations such as landowners, the chamber of commerce, Treaty Indians, municipalities and the Metis Federation.

Wood Bison Re-establishment Program

In cooperation with the Waterhen Indian Band, a program to establish a herd of wood bison began in August 1983. A 2,300 hectare enclosure was constructed near Waterhen and the first shipment of wood bison arrived in February 1984. The following spring 10 calves were born. Since then, calves born at Waterhen have been segregated from the main herd for potential release to the wild in 1988.

The program was funded in its developmental years by the federal and provincial governments and the Northern Development Agreement. The Wood Bison Re-Establishment Foundation, with patrons H.S.H. Prince Albert of Monaco, past Lieutenant Governor of Manitoba Pearl McGonigal, and wildlife artist Robert Bateman was founded through the initiative of the Canadian Wildlife Federation. The foundation will provide operating funds to the program in future years.

There are now 102 wood bison in captivity. The bison have fared well and the prospects for developing a wild herd are promising.

Local Advisory Committees

The department encouraged the formation or continuance of a large number of public advisory boards, committees and working

groups. These organizations played an important part in managing the wildlife resource by providing valuable insight and assistance into management programs.

Conclusion

Most of Manitoba's wildlife populations remained relatively stable throughout the reporting period. Barren-ground caribou, grouse, bald eagle and double-crested cormorant populations showed significant increases in numbers, while others, notably moose, badger, lynx, burrowing owl and several duck species declined.

Management programs over the past five years can best be characterized by many new initiatives and innovations in wildlife management. This proactive approach has required major financial assistance and cooperative efforts from private organizations and user groups. If wildlife management programs are to maintain their effectiveness, and Manitobans's rich heritage of wildlife is to retain its rightful place, this joint cooperation and mutual support is essential.

Sources of Information Cited

1. William B. Preston, *The Amphibians and Reptiles of Manitoba* (Winnipeg: Manitoba Museum of Man and Nature, 1982).
2. Fern L. Filion et al., *The Importance of Wildlife to Canadians (Ottawa: Canadian Wildlife Service, 1983).*